TRANE®

Air-Cooled Series R™ Rotary Liquid Chiller

Model RTAC

140 to 500 Tons (60 Hz)

140 to 400 Tons (50 Hz)

Built For the Industrial and Commercial Markets

December 2003

RLC-PRC006-EN

Introduction

You…

Like its chillers, Trane wants its relationships with customers to last. Trane is interested in maintaining long term, loyal relationships. This perspective means the point in time that a customer purchases a chiller is the beginning of a relationship, not the end. Your business is important, but your satisfaction is paramount.

Designed by Customers….

Trane's RTAC was designed with the end user's requirements in mind. Reliability, sound, efficiency and physical size were primary design concerns with this latest generation machine. New technologies were applied to literally every major component. The result is an unparalleled engineering achievement in chiller design and manufacturing.

What's New

The RTAC offers the same high reliability of Trane's previous air-cooled helical rotary design coupled with lowered sound levels, increased energy efficiency, reduced physical footprint due to its advanced design, low speed/direct drive compressor and proven Series R performance.

Some of the major advantages of the Model RTAC are:

- Over 99% reliable
- Lower sound levels
- Higher energy efficiency
- Smaller physical footprint
- HFC-134a optimized design

The Series R Model RTAC is an industrial grade design built for both the industrial and commercial markets. It is ideal for schools, hospitals, retailers, office buildings, Internet service providers and manufacturing facilities.

Figure 1. Cutaway of RTAC air-cooled chiller

1. Flooded Style Evaporator
2. Trane Helical-Rotary Compressor
3. Oil Separator
4. Low Sound Condenser Fans
5. Factory Installed and Tested Unit Controls and Starter
6. Smaller Physical Footprint

Contents

Features and Benefits

Table 1. RTAC efficiency vs Ashrae 90.1

RTAC - Exceeding the Efficiency Standard						
	Full Load Efficiency (EER*)			Part Load Efficiency (EER*)		
Tonnage	**ASHRAE 90.1**	Standard Efficiency	High Efficiency	**ASHRAE 90.1**	Standard Efficiency	High Efficiency
140	9.6	9.7	10.3	10.4	13.2	13.6
155	9.6	9.8	10.4	10.4	13.5	13.9
170	9.6	9.9	10.5	10.4	13.2	13.7
185	9.6	9.7	10.3	10.4	13.1	13.5
200	9.6	9.6	10.1	10.4	12.9	13.3
225	9.6	9.6	10.2	10.4	13.2	13.6
250	9.6	9.6	10.1	10.4	12.8	13.0
275	9.6	9.7	10.4	10.4	13.3	13.8
300	9.6	9.6	10.1	10.4	13.7	13.8
350	9.6	9.6	10.4	10.4	13.2	14.5
400	9.6	9.6	10.0	10.4	13.7	13.9
450	9.6	9.6	n/a	10.4	14.0	n/a
500	9.6	9.6	n/a	10.4	13.9	n/a

COP = EER/3.414.
Efficiencies given for 60 Hz units

ASHRAE Standard 90.1 and RTAC World Class Energy Efficiency…

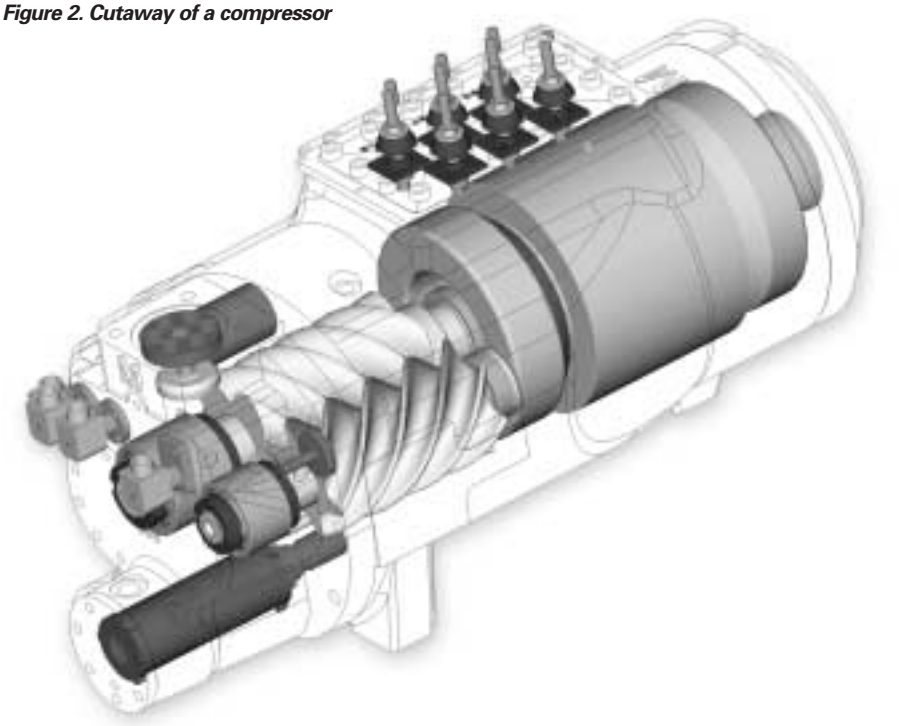
The importance of energy efficiency cannot be understated. Fortunately, ASHRAE has created a guideline emphasizing its importance. Nonetheless, energy is often dismissed as an operational cost over which the owner has little control. That perception results in missed opportunities for energy efficiency, reduced utility bills, and higher profits. Lower utility bills directly affect profitability. Every dollar saved in energy goes directly to the bottom line. Trane's RTAC is one way to maximize your profits.

ASHRAE Standard 90.1 & Executive Order - New technology applied to the design, controls, and manufacturing have created excellent efficiency levels in the RTAC that are helping to push industry minimums to new heights. All Trane air-cooled chillers meet the new efficiency levels mandated by ASHRAE Standard 90.1. This new standard requires higher efficiencies than past technologies can deliver. The US Federal Government has adopted standard 90.1 and, in some cases, requires even higher efficiencies. Federal Executive Order mandates energy consuming devices procured must be in the top 25% of their class. In the case of chillers, that product standard is ASHRAE 90.1. Trane's RTAC meets and exceeds the efficiency requirements of 90.1, while the high efficiency RTAC can meet the "stretch goals" of Executive Order.

Precise Capacity Control. Trane's patented unloading system allows the compressor to modulate infinitely and exactly match building loads. At the same time chilled water temperatures will be maintained within +/- 1/2ºF [0.28°C] of setpoint. Reciprocating and screw chillers with stepped capacity control do well to maintain chilled water temperatures within 2ºF [1.1°C] of setpoint. Stepped control also results in overcooling your space because rarely does the capacity of the machine match the building load. The result can be 10% higher energy bills. Trane's RTAC optimizes the part load performance of your machine for energy efficiency, precise control for process applications, and your personal comfort regardless of the weather outside.

Features and Benefits

Figure 2. Cutaway of a compressor



Excellent Reliability…

A buildings environment is expected to be comfortable. When it is, no one says a word. If it's not… that's a different story. The same is true with chillers. No one ever talks about chillers, yet alone compressors, until they fail, and tenants are uncomfortable and productivity is lost. Trane's helical rotary compressors have a **first year reliability rate of over 99%,** which means our chillers stay running when you need them.

Fewer moving parts. Trane's helical rotary compressors have only two major rotating parts: the male and female rotor. A reciprocating compressor can have more than 15 times that number of critical parts. Multiples of pistons, valves, crankshafts, and connecting rods in a reciprocating unit all represent different failure paths for the compressor. In fact, reciprocating compressors can easily have a failure rate four times of a helical rotor. Combine that with two to three reciprocating compressors for each helical rotary compressor on chillers of equal tonnage, and statistics tell you it's a matter of time before you lose a reciprocating compressor.

Robust components. Helical rotary compressors are precisely machined using state of the art processes from solid metal bar stock. Tolerances are maintained within a micron or less than a tenth of the diameter of a human hair. The resulting compressor is a robust yet highly sophisticated assembly capable of ingesting liquid refrigerant without risk of damage. Contrast this to a reciprocating compressor, which can be destroyed by a single slug of liquid.

Condenser coils. Trane's condenser coils are manufactured with the same philosophy as the compressors; they're built to last. Even though manufacturing processes have allowed thinner and thinner materials in their assembly, with obvious material and manufacturing savings, Trane's coil material did not change with the RTAC generation of air cooled chillers. Substantial condenser fins, that do not require additional coating in non-corrosive environments, contribute to the highest reliability standards for air-cooled chillers in the industry.

Features and Benefits

Superior Control

The Adaptive Control™ microprocessor system enhances the air-cooled Series R chiller by providing the very latest chiller control technology. With the Adaptive Control microprocessor, unnecessary service calls and unhappy tenants are avoided. The unit is designed not to trip or unnecessarily shut down. Only when the Tracer™ chiller controllers have exhausted all possible corrective actions and the unit is still violating an operating limit will the chiller shut down. Controls on other equipment typically shut down the chiller, usually just when it is needed the most.

For example:
A typical five-year-old chiller with dirty coils might trip-out on high pressure cutout on a 100°F [38°C] day in August. A hot day is just when comfort cooling is needed the most. In contrast, the air-cooled Series R chiller with an Adaptive Control microprocessor will stage fans on, modulate electronic expansion valve, and modulate slide valve position as it approaches a high pressure cutout, thereby keeping the chiller on-line when you need it the most.

Simple Installation

- **Compact Physical Size**. The Trane Model RTAC chiller averages a 20% reduction in physical footprint, while the greatest change is actually 40% smaller when compared against the previous design. This improvement makes the RTAC the smallest air-cooled chiller in the industry and a prime candidate for installations that have space constraints. All physical sizes were changed without sacrificing the side clearances needed to supply fresh airflow without coil starvation.
- **Close Spacing Installation**. The air-cooled Series R™ Chiller has the tightest recommended side clearance in the industry, four feet for maximum performance. In situations where equipment must be installed with less clearance than recommended, which frequently occurs in retrofit applications, restricted airflow is common. Conventional chillers may not work at all. However, the air-cooled Series R chiller with Adaptive Control™ microprocessor will make as much chilled water as possible given the actual installed conditions, stay on line during unforeseen abnormal conditions, and optimize the unit performance. Consult your Trane sales engineer for more details.
- **Factory Testing Means Trouble-Free Start-Up**. All air-cooled Series R chillers are given a complete functional test at the factory. This computer-based test program completely checks the sensors, wiring, electrical components, microprocessor function, communication capability, expansion valve performance and fans. In addition, each compressor is run and tested to verify capacity and efficiency. Where applicable, each unit is factory preset to the customer's design conditions; an example would be leaving liquid temperature setpoint. The result of this test program is that the chiller arrives at the job site fully tested and ready for operation.
- **Factory Installed and Tested Controls/ Options Speed Installation**. All Series R chiller options, including main power supply disconnect, low ambient control, ambient temperature sensor, low ambient lockout, communication interface and ice making controls, are factory installed and tested. Some manufacturers send accessories in pieces to be field installed. With Trane, the customer saves on installation expense and has assurance that ALL chiller controls/options have been tested and will function as intended.

Features and Benefits

Options

High Efficiency/Performance Option
This option provides oversized heat exchangers for two purposes. One, it allows the unit to be more energy efficient. Two, the unit will have enhanced operation in high ambient conditions.

Low Temperature Brine
The hardware and software on the unit are factory set to handle low temperature brine applications (less than 40°F [4.4°C]).

Ice Making
The unit controls are factory set to handle ice making for thermal storage applications.

Tracer Summit Communication Interface
Permits bi-directional communication to the Trane Integrated Comfort™ system.

LonTalk (LCI-C) Communications Interface
Provides the LonMark chiller profile inputs/outputs for use with a generic building automation system.

Remote Input Options
Permits remote chilled liquid setpoint, remote current limit setpoint, or both by accepting a 4-20 mA or 2-10 Vdc analog signal.

Remote Output Options
Permits alarm relay outputs, ice making outputs, or both.

Architectural Louvered Panels
Louvered panels cover the complete condensing coil and service area beneath the condenser.

Coil Protection
Louvered panels protect the condenser coils only.

Access Protection
A coated wire mesh that covers the access area under the condenser coils.

Wye-Delta Compressor Start Type
This option provides a reduced inrush starter. Wye-Delta starters are standard on 200-230 volt machines.

Condenser Corrosion Protection
Copper fins and CompleteCoat are available on all size units for corrosion protection. Job site conditions should be matched with the appropriate condenser fin materials to inhibit coil corrosion and ensure extended equipment life. The CompleteCoat option provides fully assembled coils with a flexible dip and bake epoxy coating.

TEAO Condenser Fan Motors
Totally enclosed air-over (TEAO) motors completely seal the motor windings to prevent exposure to ambient conditions.

Low Ambient Option
The low ambient option provides special control logic and variable frequency drives on the condenser fan circuits to permit low temperature start-up and operation down to 0°F [-18°C].

Single/Dual Incoming Power Line Connection
Single or dual points of termination are available for incoming power line connections*. Units with 3-4 compressors must order circuit breakers with the single point connection option. *Some restrictions may apply.

Convenience Outlet
Provides a 15 amp, 115 volt (60 Hz) convenience outlet on the unit.

Remote Evaporator
The remote evaporator option is available on the RTAC 140-250 ton units. This option provides a pre-engineered method of installing the evaporator and all related components indoors. Remote evaporator installations allow the water loop to remain indoors to prevent freezing, thus eliminating the addition of glycol to the system and the resulting performance degradation.

High Ambient Option
The high ambient option consists of special control logic to permit high ambient (up to 125°F [51°C]) operation. This option offers the best performance when coupled with the high efficiency performance option.

Non-Fused Power Disconnect Switch
The non-fused molded case disconnect switch (UL approved) is used to disconnect the chiller from main power and comes pre-wired from the factory with terminal block power connections. The external operator handle is lockable.

Circuit Breaker
A HACR rated molded case capacity circuit breaker (UL approved) is available. The circuit breaker can also be used to disconnect the chiller from main power with a through-the-door handle and comes pre-wired from the factory with terminal block power connections. The external operator handle is lockable.

Neoprene Isolators
Isolators provide isolation between chiller and structure to help eliminate vibration transmission. Neoprene isolators are more effective and recommended over spring isolators.

Flange Kit
Provides a raised-face flange kit that converts the grooved pipe evaporator water connections to flange connectors.

Human Interfaces
The Trane air-cooled Model RTAC chiller offers two easy-to-use operator interface panels, the EasyView and the DynaView.

EasyView is a coded display that allows the user to access the current leaving water temperature, its setpoint, and any recent diagnostics.

DynaView is an LCD touchscreen display that is navigated by file tabs. This is an advanced interface that allows the user to access any important information concerning setpoints, active temperatures, modes, electrical data, pressures, and diagnostics.

Adaptive Safety Controls
A centralized microcomputer offers a higher level of machine protection. Since the safety controls are smarter, they limit compressor operation to avoid compressor or evaporator failures, thereby minimizing nuisance shutdown. Tracer™ Chiller Controls directly senses the control variables that govern the operation of the chiller: motor current draw, evaporator pressure and condenser pressure. When any one of these variables approaches a limit condition where damage may occur to the unit or shutdown on a safety, Tracer Chiller Controls takes corrective action to avoid shutdown and keep the chiller operating. This happens through combined actions of compressor slide valve modulation, electronic expansion valve modulation and fan staging. Tracer Chiller Controls optimizes total chiller power consumption during normal operating conditions. During abnormal operating conditions, the microprocessor will continue to optimize chiller performance by taking the corrective action necessary to avoid shutdown. This keeps cooling capacity available until the problem can be solved. Whenever possible, the chiller is allowed to perform its function; making chilled water. In addition, microcomputer controls allow for more types of protection such as over and under voltage. Overall, the safety controls help keep the building or process running and out of trouble.

Figure C1. DynaView operator interface

Figure C2. EasyView operator interface

Standalone Controls
Interface to standalone units is very simple; only a remote auto/stop for scheduling is required for unit operation. Signals from the chilled water pump contactor auxiliary or a flow switch are wired to the chilled waterflow interlock. Signals from a time clock or some other remote device are wired to the external auto/stop input.

Standard Features

- **External Auto/Stop** — A jobsite provided contact closure will turn the unit on and off.
- **Chilled Waterflow Interlock** — A jobsite provided contact closure from a chilled water pump contactor or a flow switch is required and will allow unit operation if a load exists. This feature will allow the unit to run in conjunction with the pump system.
- **External Interlock** — A jobsite supplied contact opening wired to this input will turn the unit off and require a manual reset of the unit microcomputer. This closure is typically triggered by a jobsite supplied system such as a fire alarm.
- **Chilled Water Pump Control** — Unit controls provide an output to control the chilled water pump(s). One contact closure to the chiller is all that is required to initiate the chilled water system. Chilled water pump control by the chiller is a requirement on the Air-Cooled Series R.
- **Chilled Water Temperature Reset** — Reset can be based on return water temperature or outdoor air temperature.

Easy Interface to A Generic Building Management System
Controlling the air-cooled Series R chiller with building management systems is state-of-the-art, yet simple with either the LonTalk Communications Interface for Chillers (LCI-C) or Generic Building Management System Hardwire Points.

What are LonTalk, Echelon, and LonMark?
LonTalk is a communications protocol developed by the Echelon Corporation. The LonMark association develops control profiles using the LonTalk communication protocol. LonTalk is a unit level communications protocol, unlike BACNet used at the system level.

LonTalk Communications Interface for Chillers (LCI-C)

LonTalk Communications Interface for Chillers (LCI-C) provides a generic automation system with the LonMark chiller profile inputs/outputs. The inputs/outputs include both mandatory and optional network variables. Note: LonMark network variable names are in parentheses when different from chiller naming convention.

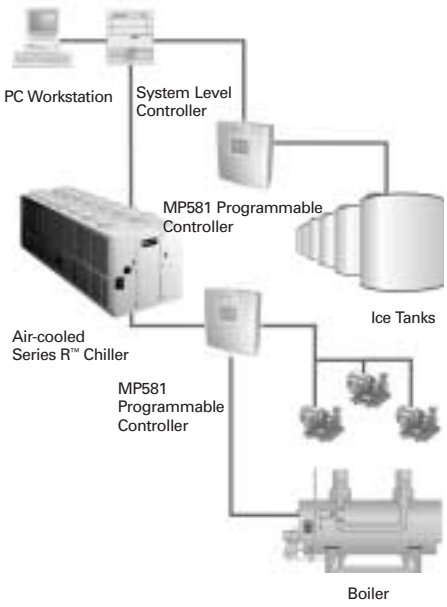
Chiller Inputs:
- Chiller Enable/Disable
- Chilled Liquid Setpoint (Cool Setpoint)
- Current Limit Setpoint (Capacity Limit Input)
- Ice Making (Chiller Mode)

Chiller Enable/Disable
Allows for chiller to be started or stopped depending on if certain operating conditions are met.

Chilled Liquid Setpoint
Allows for the external setting independent of the front panel setpoint to adjust the leaving water temperature setpoint.

Current Limit Setpoints
Allows for the external setting independent of the front panel setpoint to limit the capacity level of the chiller.

Ice Making
Provides interface with ice making control systems.



Chiller Outputs:
- On/Off
- Active Setpoint
- Average Percent RLA (Actual Capacity Level)
- Active Current Limit Setpoint (Capacity Limit)
- Leaving Chilled Water Temperature
- Entering Chilled Water Temperature
- Alarm Descriptor
- Chiller Status

On/Off
Indicates the current state of the chiller

Active Setpoint
Indicates the current value of the leaving water temperature setpoint

Average Percent RLA
Provides the current capacity level via %RLA

Active Current Limit Setpoint
Provides the current capacity level setpoint via %RLA

Alarm Descriptor
Provides alarm messages based on pre-determined criteria

Chiller Status
Indicates the running modes and states of the chiller, i.e. Running in alarm mode, chiller enabled, chiller being locally controlled, etc…

Generic Building Management System Hardwire Points

GBAS may be achieved via hardware input/output as well. The input/outputs are as follows:

Chiller hardwire inputs include:
- Chiller enable/disable
- Circuit enable/disable
- External chilled water setpoint
- External current limit setpoint
- Ice making enable

External Chilled Water Setpoint
Allows the external setting independent of the front panel setpoint by one of two means:
a) 2-10 VDC input, or
b) 4-20 mA input

External Current Limit Setpoint
Allows the external setting independent of the front panel setpoint by one of two means:
c) 2-10 VDC input, or
b) 4-20 mA input

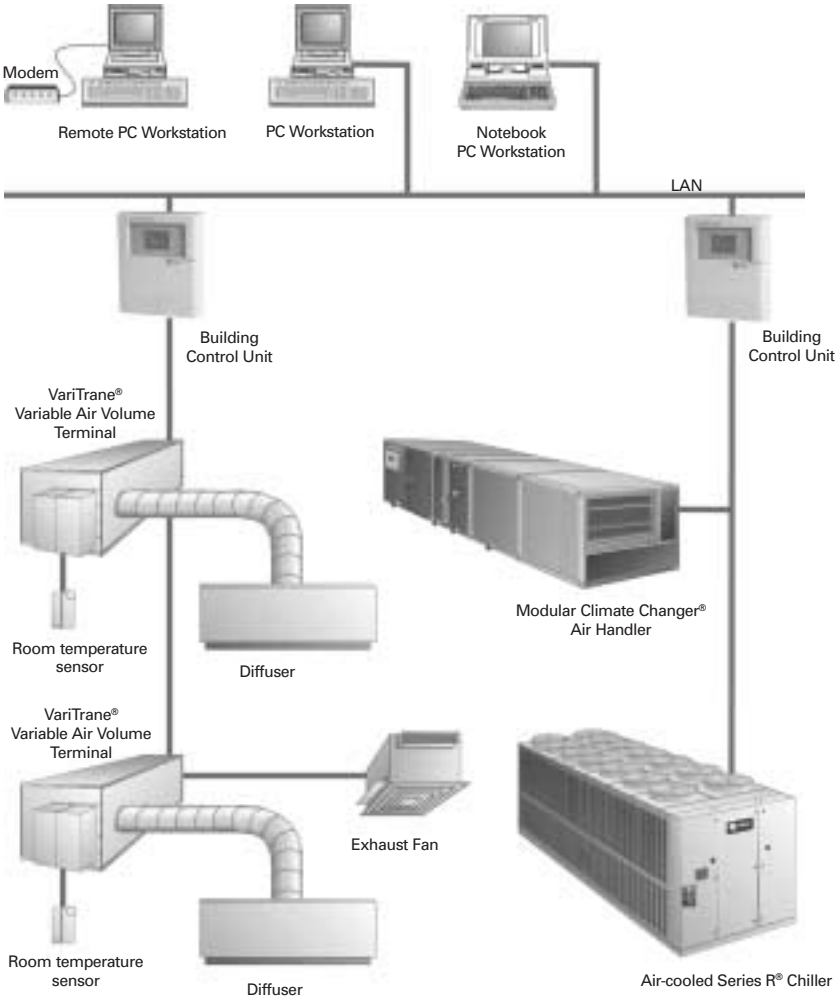
Chiller hardwire outputs include:
- Compressor running indication
- Alarm indication (Ckt1/Ckt 2)
- Maximum capacity
- Ice making status

Alarm Indication Contacts
The unit provides three single-pole/double-throw contact closures to indicate:
a) Compressor on/off status
b) Compressor running at maximum capacity
c) Failure has occurred (Ckt 1/Ckt 2)
These contact closures may be used to trigger jobsite supplied alarm lights or alarm bells.

Ice Making Control
Provides interface with ice making control systems.

Controls

Trane Integrated Comfort System Controls



Tracer Summit controls — Interface With The Trane Integrated Comfort System (ICS)

Trane Chiller Plant Control
The Tracer Summit Chiller Plant Building Management System with Chiller Plant Control provides building automation and energy management functions through stand-alone control. The Chiller Plant Control is capable of monitoring and controlling your entire chiller plant system.

Application software available:
- Time-of-day scheduling
- Demand limiting
- Chiller sequencing
- Process control language
- Boolean processing
- Zone control
- Reports and logs
- Custom messages
- Run time and maintenance
- Trend log
- PID control loops

And of course, the Trane Chiller Plant Control can be used on a stand-alone basis or tied into a complete building automation system.

When the air-cooled Series R™ chiller is used in conjunction with a Trane Tracer™ Summit system, the unit can be monitored and controlled from a remote location. The air-cooled Series R chiller can be controlled to fit into the overall building automation strategy by using time of day scheduling, timed override, demand limiting, and chiller sequencing. A building owner can completely monitor the air-cooled Series R chiller from the Tracer system, since all of the monitoring information indicated on the unit controller's microcomputer can be read off the Tracer system display. In addition, all the powerful diagnostic information can be read back at the Tracer system. Best of all, this powerful capability comes over a single twisted pair of wires! Air-cooled Series R chillers can interface with many different external control systems, from simple stand-alone units to ice making systems. Each unit requires a single-source, three-phase power supply and a single-phase 115V/60Hz, [220V/50Hz] power supply. The added power supply powers the evaporator heaters.

A single twisted pair of wires tied directly between the air-cooled Series R™ chiller and a Tracer™ Summit system provides control, monitoring and diagnostic capabilities. Control functions include auto/stop, adjustment of leaving water temperature setpoint, compressor operation lockout for kW demand limiting and control of ice making mode. The Tracer system reads monitoring information such as entering and leaving evaporator water temperatures and outdoor air temperature. Over 60 individual diagnostic codes can be read by the Tracer system. In addition, the Tracer system can provide sequencing control for up to 25 units on the same chilled water loop. Pump sequencing control can be provided from the Tracer system. Tracer ICS is not available in conjunction with the remote display or the external setpoint capability.

Required Options
Tracer Interface

External Trane Devices Required
Tracer Summit™, Tracer 100 System or Tracer Chiller Plant Control

Additional Features That May Be Used
Ice Making Control

Controls

Trane Integrated Comfort System Controls

Trane Chiller Plant Automation
Trane's depth of experience in chillers and controls makes us a well-qualified choice for automation of chiller plants using air-cooled Series R® chillers®. The chiller plant control capabilities of the Trane Tracer Summit® building automation system are unequaled in the industry. Our chiller plant automation software is fully pre-engineered and tested. It is a standard software application, not custom programming which can prove to be difficult to support, maintain, and modify.

Energy Efficiency
Trane chiller plant automation intelligently sequences starting of chillers to optimize the overall chiller plant energy efficiency. Individual chillers are designated to operate as base, peak, or swing based on capacity and efficiency. Sophisticated software automatically determines which chiller to run in response to current conditions. The software also automatically rotates individual chiller operation to equalize runtime and wear between chillers.

Trane chiller plant automation enables unique energy-saving strategies. An example is controlling pumps, and chillers from the perspective of overall system energy consumption. The software intelligently evaluates and selects the lowest energy consumption alternative.

Keeping Operators Informed
A crucial part of efficiently running a chiller plant is assuring that the operations staff is instantly aware of what is happening in the plant. Graphics showing schematics of chillers, piping, pumps, and towers clearly depict the chiller plant system, enabling building operators to easily monitor overall conditions. Status screens display both current conditions and upcoming automated control actions to add or subtract chiller capacity. Series R and other chillers can be monitored and controlled from a remote location.

Tracer Summit features standard report templates listing key operating data for troubleshooting and verifying performance. Reports for each type of Trane chiller and three and six-chiller systems are also standard. Detailed reports showing chiller runtimes aid in planning for preventative maintenance.

Swift Emergency Response
We understand the importance of maintaining chilled water production while protecting your chillers from costly damage. If no water flow is detected to a chiller's piping, the start sequence is aborted to protect the chiller. The next chiller in the sequence is immediately started to maintain cooling.

In the event of a problem, the operator receives an alarm notification and diagnostic message to aid in quick and accurate troubleshooting. A snapshot report showing system status just prior to an emergency shutdown helps operators determine the cause. If emergency conditions justify an immediate manual shutdown, the operator can override the automatic control.

Easy Documentation for Regulatory Compliance
Comprehensive documentation of refrigerant management practices is now a fact of life. Trane chiller plant automation generates the reports mandated in ASHRAE Guideline 3.

Integrated Comfort™ Capabilities
When integrated with a Tracer Summit building management system performing building control, Trane chiller plant automation coordinates with Tracer Summit applications to optimize the total building operation. With this system option, the full breadth of Trane's HVAC and controls experience are applied to offer solutions to many facility issues. If your project calls for an interface to other systems, Tracer Summit can share data via BACnet™, the ASHRAE open systems protocol.

Ice Making Systems Controls
Simple and smart control strategies are another advantage the Model RTAC chiller offers for ice storage applications. Trane Tracer™ building management systems can actually anticipate how much ice needs to be made at night and operate the system accordingly. The controls are integrated right into the chiller. Two wires and preprogrammed software dramatically reduce field installation cost and complex programming.

When the ice making option is ordered, the air-cooled Series R chiller will have two operating modes, ice making and normal daytime cooling. In the ice making mode, the air-cooled Series R chiller will operate at full compressor capacity until the return chilled fluid temperature entering the evaporator meets the ice making setpoint. This ice making setpoint is manually adjusted on the unit's microcomputer. Two input signals are required to the air-cooled Series R chiller for the ice making option. The first is an auto/stop signal for scheduling and the second is required to switch the unit in between the ice making mode and normal daytime operation. The signals are provided by a remote job site building automation device such as a time clock or a manual switch. In addition, the signals may be provided over the twisted wire pair from a Tracer system or LonTalk Communication Interface but will require the communication boards provided with the Ice Making Control Option.

Application Considerations

Important
Certain application constraints should be considered when sizing, selecting and installing Trane air-cooled Series R chillers. Unit and system reliability is often dependent upon proper and complete compliance with these considerations. When the application varies from the guidelines presented, it should be reviewed with your local Trane sales engineer.

Unit Sizing
Unit capacities are listed in the performance data section. Intentionally over-sizing a unit to assure adequate capacity is not recommended. Erratic system operation and excessive compressor cycling are often a direct result of an oversized chiller. In addition, an oversized unit is usually more expensive to purchase, install, and operate. If over-sizing is desired, consider using multiple units.

Water Treatment
Dirt, scale, products of corrosion and other foreign material will adversely affect heat transfer between the water and system components. Foreign matter in the chilled water system can also increase pressure drop and consequently, reduce water flow. Proper water treatment must be determined locally, depending on the type of system and local water characteristics. Neither salt nor brackish water is recommended for use in Trane air-cooled Series R chillers. Use of either will lead to a shortened life to an indeterminable degree. The Trane Company encourages the employment of a reputable water treatment specialist, familiar with local water conditions, to assist in this determination and in the establishment of a proper water treatment program.

Effect Of Altitude On Capacity
Air-cooled Series R chiller capacities given in the performance data tables are for use at sea level. At elevations substantially above sea level, the decreased air density will reduce condenser capacity and, therefore, unit capacity and efficiency.

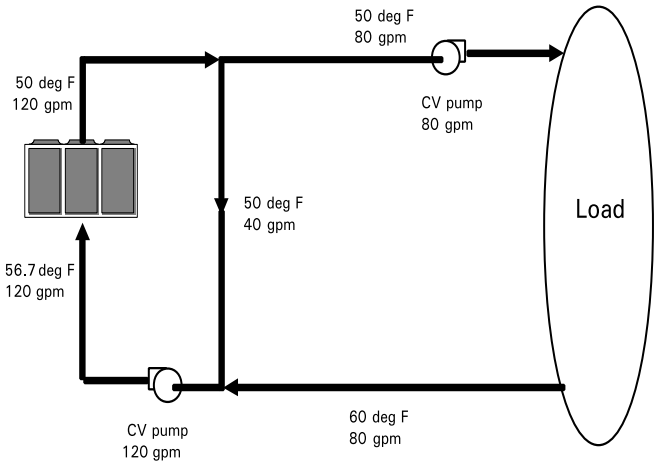
Ambient Limitations
Trane air-cooled Series R chillers are designed for year-round operation over a range of ambient temperatures. The Model RTAC chiller will operature as standard in ambient temperatures of 25 to 115°F [-4 to 46°C]. With the low ambient option, these units will operate down to 0°F [-18°C]. If an ambient temperature as high as 125°F [51°C] is the basis for design, the high ambient option will permit the chiller to run without going into a limiting condition. For installations in areas with large ambient differences, the wide ambient option will allow the chiller to perform uninhibited from 0 to 125°F [-18 to 51°C]. For operation outside these ranges, contact the local Trane sales office.

Water Flow Limits
The minimum and maximum water flow rates are given in Tables G-1 through G-4. Evaporator flow rates below the tabulated values will result in laminar flow causing freeze-up problems, scaling, stratification and poor control. Flow rates exceeding those listed may result in excessive tube erosion.

Flow Rates out of Range
Many process cooling jobs require flow rates that cannot be met with the minimum and maximum published values for the Model RTAC evaporator. A simple piping change can alleviate this problem. For example: A plastic injection molding process requires 80 gpm [5.1 l/s] of 50°F [10°C] water and returns that water at 60°F [15.6°C]. The selected chiller can operate at these temperatures, but has a minimum flow rate of 120 gpm [7.6 l/s]. The system layout in Figure A1 can satisfy the process.

Flow Control
Trane requires the chilled water flow control in conjunction with the Air-Cooled Series R Chiller to be done by the chiller. This will allow the chiller to protect itself in potentially harmful conditions.

Figure A1. GPM out of range system layout



Application Considerations

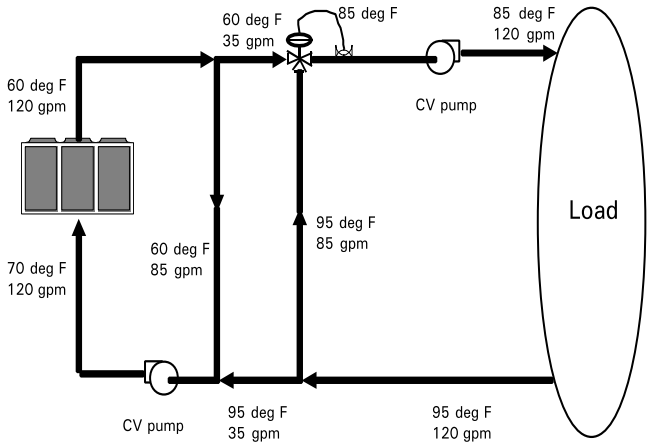
Leaving Water Temperature Limits
Trane air-cooled Series R chillers have three distinct leaving water categories: standard, low temperature, and ice making. The standard leaving solution temperature range is 40 to 60°F [4.4 to 15.6°C]. Low temperature machines produce leaving liquid temperatures less than 40°F [4.4°C]. Since liquid supply temperature setpoints less than 40°F [4.4°C] result in suction temperatures at or below the freezing point of water, a glycol solution is required for all low temperature machines. Ice making machines have a leaving liquid temperature range of 20 to 60°F [-6.7 to 15.6°C]. Ice making controls include dual setpoint controls and safeties for ice making and standard cooling capabilities. Consult your local Trane sales engineer for applications or selections involving low temperature or ice making machines. The maximum water temperature that can be circulated through an evaporator when the unit is not operating is 108°F [42°C].

Leaving Water Temperature out of Range
Many process cooling jobs require temperature ranges that cannot be met with the minimum and maximum published values for the Model RTAC evaporator. A simple piping change can alleviate this problem. For example: A laboratory load requires 120 gpm [7.6 l/s] of water entering the process at 85°F [29.4°C] and returning at 95°F [35°C]. The accuracy required is better than the cooling tower can give. The selected chiller has adequate capacity, but a maximum leaving chilled water temperature of 60°F [15.6°C].

In Figure A2, both the chiller and process flow rates are equal. This is not necessary. For example, if the chiller had a higher flow rate, there would simply be more water bypassing and mixing with warm water.

Supply Water Temperature Drop
The performance data for the Trane air-cooled Series R chiller is based on a chilled water temperature drop of 10°F [5.6°C]. Chilled water temperature drops from 6 to 18°F [3.3 to 10°C] may be used as long as minimum and maximum water temperatures and flow rates are not violated. Temperature drops outside this range are beyond the optimum range for control and may adversely affect the microcomputer's ability to maintain an acceptable supply water temperature range. Further, temperature drops of less than 6°F [3.3°C] may result in inadequate refrigerant superheat. Sufficient superheat is always a primary concern in any refrigerant system and is especially important in a package chiller where the evaporator is closely coupled to the compressor. When temperature drops are less than 6°F [3.3°C], an evaporator runaround loop may be required.

Figure A2. Temperature out of range system layout



Variable Flow in the Evaporator
An attractive chilled water system option may be a variable primary flow (VPF) system. VPF systems present building owners with several cost-saving benefits that are directly related to the pumps. The most obvious cost savings result from eliminating the secondary distribution pump, which in turn avoids the expense incurred with the associated piping connections (material, labor), electrical service, and variable-frequency drive. Building owners often cite pump-related energy savings as the reason that prompted them to install a VPF system. With the help of a software analysis tool such as System Analyzer™ or DOE-2, you can determine whether the anticipated energy savings justify the use of variable primary flow in a particular application. It may also be easier to apply variable primary flow in an existing chilled-water plant. Unlike the "decoupled" system design, the bypass can be positioned at various points in the chilled-water loop and an additional pump is unnecessary. The evaporator on the Model RTAC can withstand up to 50 percent water flow reduction as long as this flow is equal to or above the minimum flow rate requirements. The microprocessor and capacity control algorithms are designed to handle a maximum of 10% change in water flow rate per minute in order to maintain ± 0.5°F [0.28°C] leaving evaporator temperature control. For applications in which system energy savings is most important and tight temperature control is classified as +/- 2°F [1.1°C], up to 30 percent changes in flow per minute are possible.

Application Considerations

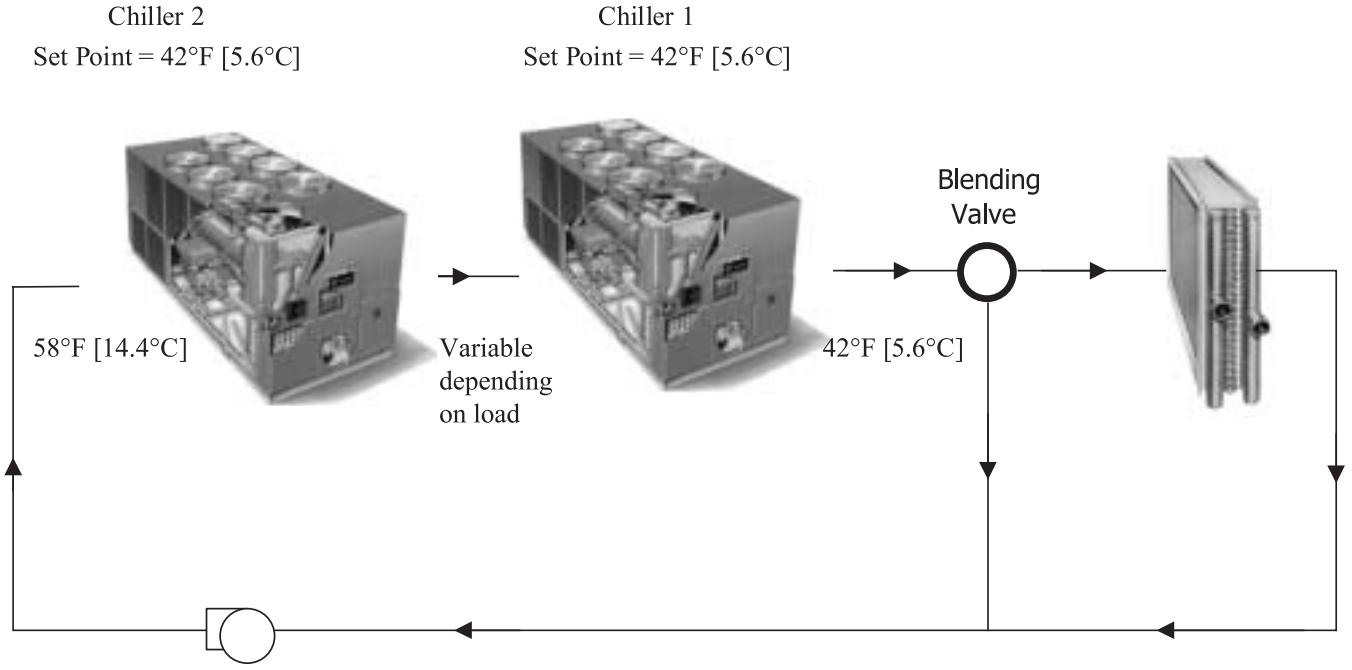
Series Chiller Arrangements
Another energy-saving strategy is to design the system around chillers arranged in series. The actual savings possible with such strategies depends on the application dynamics and should be researched by consulting your Trane Systems Solutions Representative and applying the Trane System Analyzer program. It is possible to operate a pair of chillers more efficiently in a series chiller arrangement than in a parallel arrangement. It is also possible to achieve higher entering-to-leaving chiller differentials, which may, in turn, provide the opportunity for lower chilled water design temperature, lower design flow, and resulting installation and operational cost savings. The Trance screw compressor also has excellent capabilities for "lift," which affords an opportunity for savings on the evaporator water loop.

Series chiller arrangements can be controlled in several ways. Figure A3 shows a strategy where each chiller is trying to achieve the system design set point. If the cooling load is less than 50 percent of the systems capabilities, either chiller can fulfill the demand. As system loads increase, the Chiller 2 becomes preferentially loaded as it attempts to meet the leaving chilled water setpoint. Chiller 1 will finish cooling the leaving water from Chiller 2 down to the system design setpoint.

Staggering the chiller set points is another control technique that works well for preferentially loading Chiller 1. If the cooling load is less than 50 percent of the system capacity, Chiller 1 would be able to satisfy the entire call for cooling. As system loads increase, Chiller 2 is started to meet any portion of the load that Chiller 1 can not meet.

Typical Water Piping
All building water piping must be flushed prior to making the final connections to the chiller. To reduce heat loss and prevent condensation, insulation should be installed. Expansion tanks are also usually required so that chilled water volume changes can be accommodated.

Figure A3. Typical series chiller arrangement



Application Considerations

Short Water Loops
The proper location of the temperature control sensor is in the supply (outlet) water connection or pipe. This location allows the building to act as a buffer and assures a slowly changing return water temperature. If there is not a sufficient volume of water in the system to provide an adequate buffer, temperature control can be lost, resulting in erratic system operation and excessive compressor cycling. A short water loop has the same effect as attempting to control from the building return water. Typically, a two-minute water loop is sufficient to prevent problems. Therefore, as a guideline, ensure the volume of water in the evaporator loop equals or exceeds two times the evaporator flow rate. For a rapidly changing load profile, the amount of volume should be increased. To prevent the effect of a short water loop, the following items should be given careful consideration: A storage tank or larger header pipe to increase the volume of water in the system and, therefore, reduce the rate of change of the return water temperature.

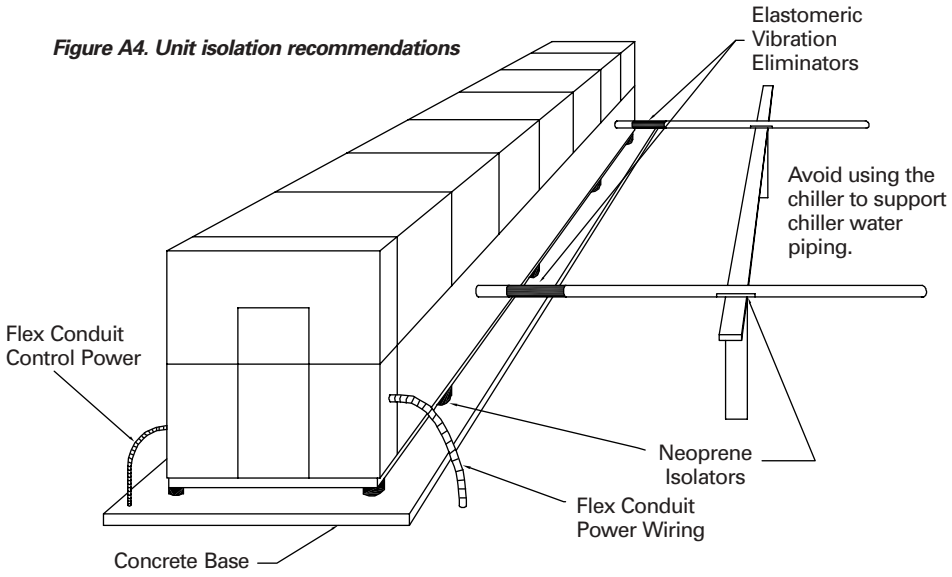
Applications Types
- Comfort cooling.
- Industrial process cooling.
- Ice/thermal storage.
- Low temperature process cooling.

Typical Unit Installation
Outdoor HVAC equipment must be located to minimize noise and vibration transmission to the occupied spaces of the building structure it serves. If the equipment must be located in close proximity to a building, it could be placed next to an unoccupied space such as a storage room, mechanical room, etc. It is not recommended to locate the equipment near occupied, sound sensitive areas of the building or near windows. Locating the equipment away from structures will also prevent sound reflection, which can increase levels at property lines, or other sensitive points.

When physically isolating the unit from structures, it is a good idea to not use rigid supports, and to eliminate any metal-to-metal or hard material contact, when possible. This includes replacing spring or metal weave isolation with elastomeric isolators. Figure A4 illustrates isolation recommendations for the RTAC.

For chiller sound ratings, installation tips and considerations on chiller location, pipe isolation, etc., refer to the *Trane Air-Cooled Series R Chillers Sound Data and Application Guide for Noise- Sensitive Installations.*

Figure A4. Unit isolation recommendations



Application Considerations

System Options — Ice Storage
Trane air-cooled Series R Chillers are well suited for ice production. An air-cooled machine typically switches to ice production at night. Two things happen under this assumption. First, the leaving brine temperature from the evaporator is lowered to around 22 to 24°F [-5.5 to –4.4°C]. Second, the ambient temperature has typically dropped about 15 to 20°F [8.3 to 11°C] from the peak daytime ambient. This effectively places a lift on the compressors that is similar to daytime running conditions. The chiller can operate in lower ambient at night and successfully produce ice to supplement the next day's cooling demands.

The Model RTAC produces ice by supplying ice storage tanks with a constant supply of glycol solution. Air-cooled chillers selected for these lower leaving fluid temperatures are also selected for efficient production of chilled fluid at nominal comfort cooling conditions. The ability of Trane chillers to serve "double duty" in ice production and comfort cooling greatly reduces the capital cost of ice storage systems.

When cooling is required, ice chilled glycol is pumped from the ice storage tanks directly to the cooling coils. No expensive heat exchanger is required. The glycol loop is a sealed system, eliminating expensive annual chemical treatment costs. The air-cooled chiller is also available for comfort cooling duty at nominal cooling conditions and efficiencies. The modular concept of glycol ice storage systems and the proven simplicity of Trane Tracer controllers allow the successful blend of reliability and energy saving performance in any ice storage application.

The ice storage system is operated in six different modes: each optimized for the utility cost of the hour.
1. Provide comfort cooling with chiller
2. Provide comfort cooling with ice
3. Provide comfort cooling with ice and chiller
4. Freeze ice storage
5. Freeze ice storage when comfort cooling is required
6. Off

Tracer optimization software controls operation of the required equipment and accessories to easily transition from one mode of operation to another. For example:

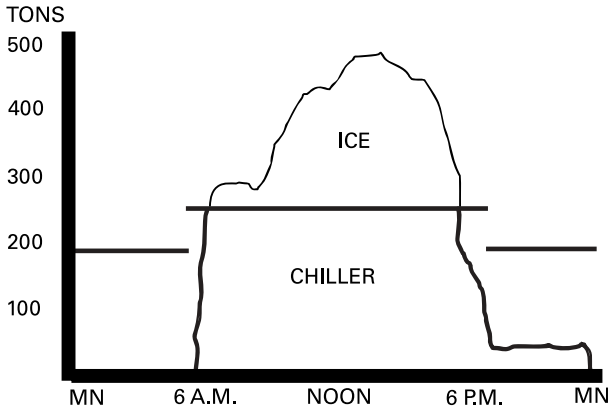
Even with ice storage systems there are numerous hours when ice is neither produced or consumed, but saved. In this mode the chiller is the sole source of cooling. For example, to cool the building after all ice is produced but before high electrical demand charges take effect, Tracer sets the air-cooled chiller leaving fluid setpoint to its most efficient setting and starts the chiller, chiller pump, and load pump.

When electrical demand is high, the ice pump is started and the chiller is either demand limited or shut down completely. Tracer controls have the intelligence to optimally balance the contribution of ice and chiller in meeting the cooling load.

The capacity of the chiller plant is extended by operating the chiller and ice in tandem. Tracer rations the ice, augmenting chiller capacity while reducing cooling costs. When ice is produced, Tracer will lower the air-cooled chiller leaving fluid setpoint and start the chiller, ice and chiller pumps, and other accessories. Any incidental loads that persist while producing ice can be addressed by starting the load pump and drawing spent cooling fluid from the ice storage tanks.

For specific information on ice storage applications, contact your local Trane sales office.

Figure A5. Ice storage demand cost savings



Model Number Description

RT	A	C	350	A	U	CO	N	N	A	F	N	N	1	N	X	1	T	E	N	N	N	0	N	N	1	0	N	N
1,2	3	4	5,6,7	8	9	10,11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33

140-500 Tons

Digits 1, 2 — Unit model
RT Rotary chiller

Digit 3 — Unit type
A Air cooled

Digit 4 — Development sequence
C First sequence

Digit 5, 6 & 7 — Nominal capacity
140 140 Nominal tons
155 155 Nominal tons
170 170 Nominal tons
185 185 Nominal tons
200 200 Nominal tons
225 225 Nominal tons
250 250 Nominal tons
275 275 Nominal tons
300 300 Nominal tons
350 350 Nominal tons
375 375 Nominal tons
400 400 Nominal tons
450 450 Nominal tons
500 500 Nominal tons

Digit 8 — Unit voltage
A 200/60/3
C 230/60/3
J 380/60/3
D 400/50/3
4 460/60/3
5 575/60/3

Digit 9 – Manufacturing location
U Water Chiller Business Unit, Pueblo, CO USA

Digit 10, 11 — Design sequence
CO Factory Input

Digit 12 — Unit basic configuration
N Standard efficiency/performance configuration
H High efficiency/performance configuration

Digit 13 — Agency listing
N No agency listing
U UL/CUL listing

Digit 14 — Pressure vessel code
A ASME pressure vessel code

Digit 15 — Evaporator application
F Standard (40-60 F) leaving temp
G Low (Less than 40 F) leaving temp
R Remote (40-60 F) leaving temp

Digit 16 — Evaporator configuration
N Standard pass arrangement, insulated

Digit 17 — Condenser application
N Standard ambient range (25-115 F)
H High ambient capability (25-125 F)
L Low ambient capability (0-115 F)
W Wide ambient capability (0-125 F)

Digit 18 — Condenser fin material
1 Standard aluminum slit fins
2 Copper fins
4 CompleteCoat epoxy coated fins

Digit 19 — Condenser fan/motor configuration
N STD fans with ODP motors
T STD fans with TEAO motors
W Low noise fans

Digit 20 — Compressor motor starter type
X Across-the-line starter
Y Wye-delta closed transition starter

Digit 21 — Incoming power line connection
1 Single point power connection
2 Dual point power connection

Digit 22 — Power line connection type
T Terminal block connection for incoming line(s)
D Non-fused disconnect switch(es) for incoming line(s)
C HACR rated circuit breaker(s) for incoming line(s)

Digit 23 — Unit operator interface
E EasyView operator interface
D DynaView operator interface

Digit 24 — Remote operator interface
N No remote interface
C Tracer Comm 3 interface
L LonTalk compatible (LCI-C) interface

Digit 25 — Control input accessories/ options
N No remote inputs
R Ext. evaporator leaving water setpoint
C Ext. current limit setpoint
B Ext. leaving water and current limit setpoint

Digit 26 — Control output accessories/ options
N No output options
A Alarm relay outputs
C Icemaking I/O
D Alarm relay outputs and icemaking I/O

Digit 27 — Electrical protection options
0 No short circuit rating
5 10,000 Amp short circuit rating
4 35,000 Amp short circuit rating
6 65,000 Amp short circuit rating

Digit 28 — Electrical accessories
N No electrical accessories
F Vapor proof flow switch – 150 psi
E Nema-1 flow switch –150 psi

Digit 29 — Control panel accessories
N No convenience outlet
A 15A 115V convenience outlet (60Hz)

Digit 30 — Service valves
1 With suction service valves

Digit 31 — Compressor sound attenuation option
0 No compressor sound attenuation
1 Factory installed compressor sound attenuation
2 Field installed compressor sound attenuation

Digit 32 — Appearance options
N No appearance options
A Architectural louvered panels
C Half louvers
G Access guards
B Access guards and half louvers

Digit 33 — Installation accessories
N No installation accessories
R Neoprene in shear unit isolators
F Flange kit for water connections
G Neoprene isolators and flange kit

General Data

Table G-1. General data — 140-500 ton 60 Hz units - standard efficiency

Size		140	155	170	185	200	225	250	275	300	350	400	450	500
Type		STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD
Compressor														
Quantity (1)		2	2	2	2	2	2	2	3	3	3	4	4	4
Nominal Size (tons)									85 /	100 /	120 /	100-100 /	120-120 /	120-120 /
@ 60 Hz		70/70	85/70	85/85	100/85	100/100	120/100	120/120	85-100	100-100	120-100	100-100	100-100	120-120
Evaporator														
Water storage	(gallons)	29	32	33	35	39	38	42	60	66	71	81	87	93
	(liters)	111	121	127	134	146	145	158	227	249	267	304	327	350
Minimum flow	(gpm)	197	221	209	221	250	221	250	275	308	342	457	501	545
	(L/s)	12	14	13	14	16	14	16	17	20	22	29	32	34
Maximum flow	(gpm)	700	787	765	787	853	787	853	908	1070	1192	1656	1818	1979
	(L/s)	44	50	48	50	54	50	54	57	68	75	105	115	125
Condenser														
Qty of coils		4	4	4	4	4	4	4	8	8	8	8	8	8
Coil length	(inches)	156/156	180/156	180/180	216/180	216/216	252/216	252/252	180/108	216/108	252/108	216/216	252/216	252/252
	(millimeters)	3962/3962	4572/3962	4572/4572	5486/4572	5486/5486	6401/5486	6401/6401	4572/2743	5486/2743	6401/4572	5486/5486	6401/5486	6401/6401
Coil height	(inches)	42	42	42	42	42	42	42	42	42	42	42	42	42
	(millimeters)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192	192	192	192	192	192	192	192
Number of rows		3	3	3	3	3	3	3	3	3	3	3	3	3
Condenser fans														
Quantity (1)		4/4	5/4	5/5	6/5	6/6	7/6	7/7	10/6	12/6	14/6	12/12	14/12	14/14
Diameter	(inches)	30	30	30	30	30	30	30	30	30	30	30	30	30
	(millimeters)	762	762	762	762	762	762	762	762	762	762	762	762	762
Total airflow	(cfm)	77000	84542	92087	101296	110506	119725	128946	147340	165766	184151	221016	239456	257991
	(m^3/hr)	130811	143623	156441	172086	187732	203394	219059	250307	281610	312843	375471	406797	438285
Nominal fan speed	rpm	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
	rps	19	19	19	19	19	19	19	19	19	19	19	19	19
Tip speed	(ft/min)	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954
	M/S	45	45	45	45	45	45	45	45	45	45	45	45	45
Minimum starting/operating ambient (2)														
Standard unit	(F)	25	25	25	25	25	25	25	25	25	25	25	25	25
	(C)	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Low ambient	(F)	0	0	0	0	0	0	0	0	0	0	0	0	0
	(C)	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8
General unit														
Refrigerant		HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
No. of independent refrigerant circuits		2	2	2	2	2	2	2	2	2	2	2	2	2
% Minimum load		15	15	15	15	15	15	15	15	15	15	15	15	15
Refrigerant charge (1)	(pounds)	175/175	185/175	185/185	215/185	215/215	235/215	235/235	335/195	385/195	430/215	385/385	430/385	430/430
	(kilograms)	79/79	84/79	84/84	98/84	98/98	107/98	107/107	152/88	175/88	195/97	175/175	195/175	195/195
Oil charge (1)	[gallons]	1.5/1.5	1.5/1.5	1.5/1.5	2.1/1.5	2.1/2.1	2.1/2.1	2.1/2.1	4.6/2.6	5.0/2.6	4.6/4.6	5.0/5.0	5.0/5.0	5.0/5.0
	[liters]	5.7/5.7	5.7/5.7	5.7/5.7	5.7/7.9	7.9/7.9	7.9/7.9	7.9/7.9	17.4/9.8	18.9/9.8	17.4/17.4	18.9/18.9	18.9/18.9	18.9/18.9

Notes:
1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

General Data

Table G-2. General data — 140-400 ton 60 Hz units - high efficiency

Size		140	155	170	185	200	225	250	275	300	350	400
Type		HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
Compressor												
Quantity (1)		2	2	2	2	2	2	2	3	3	4	4
Nominal Size (tons)										100 /	85-85 /	100-100 /
@ 60 Hz		70/70	85/70	85/85	100/85	100/100	120/100	120/120	85-85/100	100-100	85-85	100-100
Evaporator												
Water storage	(gallons)	33	35	39	38	42	42	41.7	71	71	81	93
	(liters)	127	134	146	145	158	158	157.8	267	267	304	351
Minimum flow	(gpm)	209	221	250	221	250	250	250	342	342	457	545
	(L/s)	13	14	16	14	16	16	16	22	22	29	34
Maximum flow	(gpm)	765	787	853	787	853	853	853	1192	1192	1656	1979
	(L/s)	48	50	54	50	54	54	54	75	75	105	125
Condenser												
Qty of coils		4	4	4	4	4	8	8	8	8	8	8
Coil length	(inches)	180/180	216/180	216/216	252/216	252/252	144/144	144/144	216/144	252/144	216/216	252/252
	(millimeters)	4572/4572	5486/4572	5486/5486	6401/5486	6401/6401	3658/3658	4572/2743	5486/3658	6401/3658	5486/5486	6401/6401
Coil height	(inches)	42	42	42	42	42	42	42	42	42	42	42
	(millimeters)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192	192	192	192	192	192
Number of rows		3	3	3	3	3	3	3	3	3	3	3
Condenser fans												
Quantity (1)		5/5	6/5	6/6	7/6	7/7	8/6	8/8	12/6	14/6	12/12	14/14
Diameter	(inches)	30	30	30	30	30	30	30	30	30	30	30
	(millimeters)	762	762	762	762	762	762	762	762	762	762	762
Total airflow	(cfm)	91993	101190	110387	119598	128812	136958	147242	173733	192098	220778	257626
	(m^3/hr)	156281	171906	187530	203178	218831	232670	250141	295145	326344	375066	437665
Nominal fan speed	rpm	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
	rps	19	19	19	19	19	19	19	19	19	19	19
Tip speed	(ft/min)	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954	8954
	M/S	45	45	45	45	45	45	45	45	45	45	45
Minimum starting/operating ambient (2)												
Standard unit	(F)	25	25	25	25	25	25	25	25	25	25	25
	(C)	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Low ambient	(F)	0	0	0	0	0	0	0	0	0	0	0
	(C)	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8
General unit												
Refrigerant		HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
No. of independent refrigerant circuits		2	2	2	2	2	2	2	2	2	2	2
% Minimum load		15	15	15	15	15	15	15	15	15	15	15
Refrigerant charge (1)	(pounds)	185/185	210/185	210/210	235/210	235/235	245/245	245/245	385/215	430/215	385/385	430/430
	(kilograms)	84/84	95/87	95/95	107/95	107/107	111/111	111/111	175/97	195/97	175/175	195/195
Oil charge (1)	[gallons]	1.5/1.5	1.5/1.5	1.5/1.5	2.1/1.5	2.1/2.1	2.1/2.1	2.1/2.1	4.6/2.7	5.0/2.7	4.6/4.6	5.0/5.0
	[liters]	5.7/5.7	5.7/5.7	5.7/5.7	5.7/7.9	7.9/7.9	7.9/7.9	7.9/7.9	17.4/10.2	18.9/10.2	17.4/17.4	18.9/18.9

Notes:
1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

General Data

Table G-3. General data — 140-400 ton 50 Hz units - standard efficiency

Size		140	155	170	185	200	250	275	300	350	375	400
Type		STD	STD	STD	STD	STD	STD	STD	STD	STD	STD	STD
Compressor												
Quantity (1)		2	2	2	2	2	3	3	3	4	4	4
Nominal Size (tons)							70-70 /	85-85 /	100-100 /	85-85 /	100-100 /	100-100 /
@ 50 Hz		70/70	85/70	85/85	100/85	100/100	100	100	100	85-85	85-85	100-100
Evaporator												
Water storage	(gallons)	29	32	33	35	39	54	60	66	71	73	81
	(liters)	111	121	127	134	146	205	227	249	265	276	304
Minimum flow	(gpm)	197	221	209	221	250	242	275	308	457	501	545
	(L/s)	12	14	13	14	16	15	17	20	29	32	34
Maximum flow	(gpm)	700	787	765	787	853	747	909	1070	1313	1454	1656
	(L/s)	44	50	48	50	54	47	57	68	83	92	105
Condenser												
Qty of coils		4	4	4	4	4	8	8	8	8	8	8
Coil length	(inches)	156/156	180/156	180/180	216/180	216/216	156/108	180/108	216/108	180/180	216/180	252/216
	(millimeters)	3962/3962	4572/3962	4572/4572	5486/4572	5486/5486	3962/4572	4572/2743	5486/2743	4572/4572	5486/4572	6401/5486
Coil height	(inches)	42	42	42	42	42	42	42	42	42	42	42
	(millimeters)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192	192	192	192	192	192
Number of rows		3	3	3	3	3	3	3	3	3	3	3
Condenser fans												
Quantity (1)		4/4	5/4	5/5	6/5	6/6	8/6	10/6	12/6	10/10	12/10	12/12
Diameter	(inches)	30	30	30	30	30	30	30	30	30	30	30
	(millimeters)	762	762	762	762	762	762	762	762	762	762	762
Total airflow	(cfm)	63346	69507	75671	83236	90803	108698	121056	136210	151332	166467	181611
	(m^3/hr)	107615	118081	128553	141405	154260	184661	205655	231399	257089	282801	308528
Nominal fan speed	rpm	950	950	950	950	950	950	950	950	950	950	950
	rps	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8
Tip speed	(ft/min)	7461	7461	7461	7461	7461	7461	7461	7461	7461	7461	7461
	M/S	38	38	38	38	38	38	38	38	38	38	38
Minimum starting/operating ambient (2)												
Standard unit	(F)	25	25	25	25	25	25	25	25	25	25	25
	(C)	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Low ambient	(F)	0	0	0	0	0	0	0	0	0	0	0
	(C)	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8
General unit												
Refrigerant		HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
No. of independent refrigerant circuits		2	2	2	2	2	2	2	2	2	2	2
% Minimum load		15	15	15	15	15	15	15	15	15	15	15
Refrigerant charge (1)	(pounds)	175/175	185/175	185/185	215/185	215/215	305/195	335/195	385/195	335/335	385/335	385/385
	(kilograms)	79/79	84/79	84/84	98/84	98/98	138/88	152/88	175/88	152/152	175/152	175/175
Oil charge (1)	[gallons]	1.5/1.5	1.5/1.5	1.5/1.5	2.1/1.5	2.1/2.1	4.6/2.6	4.6/2.6	5.0/2.6	4.6/4.6	5.0/4.6	5.0/5.0
	[liters]	5.7/5.7	5.7/5.7	5.7/5.7	5.7/7.9	7.9/7.9	17.4/9.8	17.4/9.8	18.9/9.8	17.4/17.4	18.9/17.4	18.9/18.9

Notes:
1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

General Data

Table G-4. General data — 140-400 ton 50 Hz units - high efficiency

Size		140	155	170	185	200	250	275	300	350	375	400
Type		HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
Compressor												
Quantity (1)		2	2	2	2	2	3	3	3	4	4	4
Nominal Size (tons)							70-70 /	85-85 /	100-100 /	85-85 /	100-100 /	100-100 /
@ 50 Hz		70/70	85/70	85/85	100/85	100/100	100	100	100	85-85	85-85	100-100
Evaporator												
Water storage	(gallons)	33	35	39	38	42	66	71	71	81	87	93
	(liters)	127	134	146	145	158	249	267	267	304	327	350
Minimum flow	(gpm)	209	221	250	221	250	308	342	342	457	501	545
	(L/s)	13	14	16	14	16	20	22	22	29	32	34
Maximum flow	(gpm)	765	787	853	787	853	1070	1192	1192	1656	1818	1979
	(L/s)	48	50	54	50	54	68	75	75	105	115	125
Condenser												
Qty of coils		4	4	4	4	4	8	8	8	8	8	8
Coil length	(inches)	180/180	216/180	216/216	252/216	252/252	180/108	216/144	252/144	216/216	252/216	252/252
	(millimeters)	4572/4572	5486/4572	5486/5486	6401/5486	6401/6401	4572/2743	5486/3658	6401/3658	5486/5486	6401/5486	6401/6401
Coil height	(inches)	42	42	42	42	42	42	42	42	42	42	42
	(millimeters)	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067	1067
Fins/Ft		192	192	192	192	192	192	192	192	192	192	192
Number of rows		3	3	3	3	3	3	3	3	3	3	3
Condenser fans												
Quantity (1)		5/5	6/5	6/6	7/6	7/7	10/6	12/6	14/6	12/12	14/12	14/14
Diameter	(inches)	30	30	30	30	30	30	30	30	30	30	30
	(millimeters)	762	762	762	762	762	762	762	762	762	762	762
Total airflow	(cfm)	75575	83130	90687	98256	105826	120971	142969	158112	181371	194731	211648
	(m^3/hr)	128390	141225	154063	166921	179781	205510	242881	268607	308120	330817	359556
Nominal fan speed	rpm	950	950	950	950	950	950	950	950	950	950	950
	rps	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8	15.8
Tip speed	(ft/min)	7461	7461	7461	7461	7461	7461	7461	7461	7461	7461	7461
	M/S	38	38	38	38	38	38	38	38	38	38	38
Minimum starting/operating ambient (2)												
Standard unit	(F)	25	25	25	25	25	25	25	25	25	25	25
	(C)	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9	-3.9
Low ambient	(F)	0	0	0	0	0	0	0	0	0	0	0
	(C)	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8	-17.8
General unit												
Refrigerant		HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a	HFC-134a
No. of independent refrigerant circuits		2	2	2	2	2	2	2	2	2	2	2
% Minimum load		15	15	15	15	15	15	15	15	15	15	15
Refrigerant charge (1)	(pounds)	185/185	210/185	210/210	235/210	235/235	335/195	385/215	430/215	385/385	430/385	430/430
	(kilograms)	84/84	95/87	95/95	107/95	107/107	152/88	175/97	195/97	175/175	195/175	195/195
Oil charge (1)	(pounds)	15.3/15.3	21.8/20.8	21.8/21.8	22.8/21.8	22.8/22.8	33.7/20.3	39.1/24.3	42.6/24.3	39.1/39.1	42.6/39.1	42.6/42.6
	(kilograms)	5.7/5.7	5.7/5.7	5.7/5.7	5.7/7.9	7.9/7.9	17.4/9.8	17.4/9.8	18.9/9.8	17.4/17.4	18.9/18.9	18.9/18.9

Notes:
1. Data containing information on two circuits shown as follows: CKT 1/CKT 2
2. Minimum start-up/operating ambient based on a 5 mph wind across the condenser

Selection Procedure

Trane air-cooled Series R chiller performance is rated in accordance with the ARI Standard 550/590-1998 Certification Program. Chiller selection assistance and performance information can be obtained by using the Series R chiller selection program, available through local Trane sales offices.

The chiller capacity tables cover the most frequently encountered leaving liquid temperatures. The tables reflect a 10°F [5.6°C] temperature drop through the evaporator. For other temperature drops, apply the appropriate Performance Data Adjustment Factors from Table A-1. For chilled brine selections, contact your local Trane sales engineer. To select a Trane air-cooled Series R™ chiller, the following information is required:

1
Design load in tons of refrigeration

2
Design chilled water temperature drop

3
Design leaving chilled water temperature

4
Design ambient temperature

Evaporator flow rates can be determined by using the following formulas:
GPM = (Tons x 24) / Temperature Drop (Degrees F)
OR
L/S = (kW (Capacity) x .239) / Temperature Drop (Degrees C)

NOTE: Flow rates must fall within the limits specified in Tables G-1 through G-4 (for GPM or for L/s).

Selection Example
Given:
Required System Load = 140 Tons
Leaving Chilled Water Temperature (LCWT) = 44°F Chilled Water Temperature Drop = 10°F Design Ambient Temperature = 95°F
Evaporator Fouling Factor = 0.0001

1
To calculate the required chilled water flow rate we use the formula given below:
GPM = (140 Tons x 24) / 10°F = 336 GPM

2
From Table P-1 (RTAC performance data), an RTAC 140 standard at the given conditions will produce 138.2 tons with compressor power input of 158.6 kW and a unit EER of 9.7.

3
To determine the evaporator pressure drop use the flow rate (GPM) and pressure drop chart on page 16. Entering the curve at 336 gpm, the pressure drop for a nominal 140 standard evaporator is 16 feet.

Minimum Leaving Chilled Water Temperature Setpoint
The minimum leaving chilled water temperature setpoint for water is 40°F. For those applications requiring lower setpoints, a glycol solution must be used. Contact the local Trane sales engineer for additional information.

Table S-1. Performance data adjustment factors

Fouling Factor	Chilled Water Temp.	Elevation											
		Sea Level			2000 ft			4000 ft			6000 ft		
		CAP	GPM	KW	CAP	GPM	KW	CAP	GPM	KW	CAP	GPM	KW
0.0001	8	0.997	1.246	0.999	0.987	1.233	1.012	0.975	1.217	1.027	0.960	1.200	1.045
	10	1.000	1.000	1.000	0.989	0.989	1.013	0.977	0.977	1.028	0.963	0.963	1.047
	12	1.003	0.835	1.001	0.992	0.826	1.014	0.979	0.816	1.030	0.965	0.804	1.048
	14	1.004	0.717	1.002	0.993	0.710	1.016	0.981	0.701	1.031	0.966	0.690	1.049
	16	1.006	0.629	1.003	0.995	0.622	1.016	0.982	0.614	1.032	0.968	0.605	1.050
0.00025	8	0.982	1.227	0.991	0.972	1.215	1.003	0.961	1.200	1.018	0.947	1.183	1.036
	10	0.986	0.985	0.992	0.975	0.975	1.005	0.963	0.963	1.020	0.950	0.950	1.038
	12	0.988	0.823	0.994	0.978	0.815	1.006	0.966	0.805	1.022	0.952	0.793	1.040
	14	0.991	0.708	0.995	0.980	0.700	1.008	0.968	0.692	1.023	0.954	0.682	1.041
	16	0.992	0.621	0.996	0.982	0.614	1.009	0.970	0.606	1.024	0.956	0.598	1.042

Table P-1. 60 Hz standard efficiency machines in English units

Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Condenser Entering Air Temperature (F) 85 Tons	85 kW input	85 EER	95 Tons	95 kW input	95 EER	105 Ton	105 kW input	105 EER	115 Tons	115 kW input	115 EER
40	140 STD	138.0	139.9	10.9	128.4	152.4	9.4	118.5	166.4	8.0	108.3	182.1	6.7
	155 STD	151.7	152.4	10.9	141.3	166.0	9.4	130.7	181.4	8.1	119.7	198.5	6.8
	170 STD	165.6	165.0	11.0	154.6	179.9	9.5	143.2	196.5	8.1	131.5	215.1	6.9
	185 STD	180.9	183.7	10.8	168.9	199.7	9.4	156.5	217.8	8.0	143.8	238.1	6.8
	200 STD	196.6	202.7	10.7	183.6	219.9	9.3	170.2	239.4	7.9	156.2	261.3	6.7
	225 STD	216.1	222.2	10.7	202.1	241.1	9.3	187.5	262.5	8.0	172.5	286.6	6.8
	250 STD	236.2	242.2	10.8	221.0	262.7	9.4	205.2	286.0	8.0	188.8	312.1	6.8
	275 STD	266.9	272.0	10.8	249.9	296.1	9.4	232.1	323.3	8.0	213.8	353.7	6.8
	300 STD	299.3	312.5	10.6	280.1	339.0	9.2	260.2	369.1	7.9	239.4	402.9	6.7
	350 STD	338.6	354.0	10.6	317.3	383.8	9.2	295.1	417.7	7.9	272.0	455.8	6.7
	400 STD	400.0	416.3	10.6	374.4	451.5	9.2	347.6	491.4	7.9	319.9	536.3	6.7
	450 STD	436.5	458.1	10.5	408.9	496.5	9.2	380.0	540.3	7.9	350.0	589.3	6.7
	500 STD	477.0	500.1	10.6	447.0	541.8	9.2	415.7	589.1	7.9	383.1	642.3	6.7
42	140 STD	143.2	142.9	11.1	133.3	155.5	9.5	123.1	169.6	8.1	112.6	185.4	6.9
	155 STD	157.4	155.7	11.1	146.7	169.4	9.6	135.7	184.8	8.2	124.4	202.0	6.9
	170 STD	171.7	168.5	11.2	160.4	183.4	9.7	148.6	200.2	8.3	136.6	218.8	7.0
	185 STD	187.5	187.7	11.0	175.2	203.8	9.5	162.4	222.0	8.2	149.3	242.4	6.9
	200 STD	203.8	207.2	10.9	190.4	224.5	9.4	176.5	244.1	8.1	162.1	266.1	6.9
	225 STD	223.9	227.3	10.9	209.4	246.3	9.5	194.4	267.9	8.1	178.8	292.1	6.9
	250 STD	244.9	248.0	10.9	229.1	268.6	9.5	212.7	292.0	8.2	195.8	318.3	6.9
	275 STD	276.4	277.7	11.0	258.9	301.9	9.5	240.6	329.3	8.2	221.7	359.9	6.9
	300 STD	309.8	319.3	10.7	290.1	346.0	9.3	269.5	376.3	8.0	248.2	410.3	6.8
	350 STD	350.6	362.0	10.7	328.6	392.1	9.3	305.7	426.3	8.1	281.8	464.6	6.9
	400 STD	414.2	425.4	10.8	387.8	460.8	9.4	360.2	501.1	8.1	331.6	546.3	6.9
	450 STD	452.0	468.4	10.7	423.5	507.2	9.3	393.7	551.3	8.0	362.7	600.7	6.8
	500 STD	494.0	511.8	10.7	463.1	553.9	9.3	430.7	601.6	8.0	396.9	655.1	6.9
44	140 STD	148.4	146.0	11.3	138.2	158.6	9.7	127.7	172.9	8.3	116.9	188.7	7.0
	155 STD	163.2	159.0	11.3	152.1	172.8	9.8	140.8	188.3	8.4	129.2	205.6	7.1
	170 STD	178.0	172.0	11.4	166.2	187.1	9.9	154.2	203.9	8.5	141.8	222.7	7.2
	185 STD	194.2	191.7	11.2	181.5	208.0	9.7	168.4	226.3	8.3	154.8	246.8	7.1
	200 STD	211.1	211.8	11.0	197.2	229.2	9.6	182.9	249.0	8.2	168.1	271.1	7.0
	225 STD	231.8	232.5	11.0	216.9	251.6	9.6	201.4	273.4	8.3	185.3	297.7	7.0
	250 STD	253.6	253.8	11.1	237.3	274.6	9.6	220.4	298.2	8.3	202.8	324.6	7.1
	275 STD	286.0	283.4	11.2	268.0	307.9	9.7	249.2	335.5	8.3	229.8	366.2	7.1
	300 STD	320.5	326.2	10.9	300.2	353.1	9.6	279.0	383.6	8.2	257.0	417.8	6.9
	350 STD	362.7	370.3	10.9	340.0	400.6	9.6	316.3	435.0	8.2	291.6	473.5	7.0
	400 STD	428.5	434.7	10.9	401.3	470.4	9.6	372.9	510.9	8.2	343.5	556.4	7.0
	450 STD	467.7	479.1	10.8	438.3	518.2	9.6	407.6	562.5	8.1	375.6	612.2	6.9
	500 STD	511.3	523.8	10.8	479.3	566.3	9.6	445.8	614.3	8.2	410.9	668.1	7.0

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Table P-1 (Continued). 60 Hz standard efficiency machines in English units

Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Condenser Entering Air Temperature (F) 85 Tons	85 kW input	85 EER	95 Tons	95 kW input	95 EER	105 Ton	105 kW input	105 EER	115 Tons	115 kW input	115 EER
	140 STD	153.8	149.1	11.4	143.3	161.9	9.9	132.4	176.2	8.4	121.2	192.1	7.1
	155 STD	169.0	162.4	11.5	157.7	176.3	10.0	146.0	191.9	8.5	134.0	209.2	7.2
	170 STD	184.3	175.7	11.6	172.2	190.8	10.0	159.8	207.7	8.6	147.1	226.6	7.3
	185 STD	201.1	195.9	11.4	187.9	212.2	9.9	174.4	230.7	8.5	160.5	251.3	7.2
	200 STD	218.4	216.5	11.2	204.2	234.0	9.7	189.4	253.9	8.4	174.1	276.2	7.1
46	225 STD	239.9	237.8	11.2	224.5	257.1	9.7	208.4	279.0	8.4	191.8	303.4	7.1
	250 STD	262.5	259.8	11.2	245.6	280.8	9.8	228.1	304.5	8.4	209.8	331.1	7.2
	275 STD	295.7	289.3	11.3	277.2	314.0	9.8	257.9	341.7	8.5	238.0	372.6	7.2
	300 STD	331.2	333.3	11.0	310.3	360.4	9.6	288.6	391.1	8.3	265.9	425.5	7.1
	350 STD	374.9	378.7	11.0	351.5	409.3	9.6	327.1	443.9	8.3	301.6	482.6	7.1
	400 STD	443.0	444.1	11.1	415.0	480.1	9.7	385.8	520.9	8.3	355.5	566.7	7.1
	450 STD	483.5	489.9	11.0	453.2	529.3	9.6	421.6	574.0	8.3	388.6	624.0	7.1
	500 STD	528.7	536.1	11.0	495.7	578.9	9.6	461.1	627.3	8.3	423.3	677.7	7.1
	140 STD	159.2	152.4	11.6	148.4	165.2	10.0	137.1	179.6	8.6	125.6	195.6	7.3
	155 STD	175.0	165.9	11.7	163.3	179.8	10.1	151.2	195.5	8.7	138.9	212.9	7.4
	170 STD	190.7	179.4	11.8	178.3	194.6	10.2	165.5	211.6	8.8	152.4	230.5	7.5
	185 STD	208.0	200.1	11.5	194.5	216.6	10.0	180.5	235.1	8.6	166.2	255.8	7.3
	200 STD	225.9	221.3	11.3	211.2	239.0	9.9	195.9	258.9	8.5	180.2	281.3	7.2
48	225 STD	248.1	243.2	11.3	232.1	262.7	9.9	215.5	284.7	8.5	198.4	309.3	7.3
	250 STD	271.5	266.0	11.4	254.1	287.2	9.9	235.9	311.0	8.5	217.0	337.6	7.3
	275 STD	305.6	295.4	11.5	286.5	320.2	10	266.7	348.1	8.6	246.3	379.1	7.3
	300 STD	342.1	340.5	11.2	320.6	367.8	9.8	298.2	398.7	8.4	275.0	433.3	7.2
	350 STD	387.3	387.3	11.1	363.2	418.1	9.7	338.0	453.0	8.4	304.6	476.3	7.2
	400 STD	457.6	453.8	11.2	428.8	490	9.8	398.8	531.1	8.5	367.6	577.1	7.2
	450 STD	499.5	501.0	11.1	468.3	540.7	9.7	435.7	585.7	8.4	392.5	616.2	7.2
	500 STD	546.3	548.7	11.1	512.2	591.9	9.7	476.5	640.6	8.4	425.5	664.2	7.3
	140 STD	164.7	155.7	11.8	153.5	168.5	10.2	142.0	183.0	8.7	130.1	199.1	7.4
	155 STD	181.0	169.5	11.9	169.0	183.5	10.3	156.6	199.2	8.8	143.8	216.7	7.5
	170 STD	197.2	183.2	11.9	184.4	198.4	10.4	171.3	215.5	8.9	157.9	234.5	7.6
	185 STD	214.9	204.4	11.7	201.0	221.0	10.2	186.7	239.6	8.8	171.9	260.4	7.5
	200 STD	233.4	226.2	11.5	218.2	244.0	10.0	202.5	264.1	8.6	186.3	286.6	7.4
50	225 STD	256.3	248.8	11.5	239.9	268.4	10.0	222.7	290.5	8.6	202.0	308.5	7.4
	250 STD	280.7	272.4	11.5	262.6	293.6	10.0	243.8	317.6	8.7	219.1	332.7	7.5
	275 STD	315.5	301.5	11.6	296.0	326.4	10.1	275.6	354.5	8.8	250.2	377.2	7.5
	300 STD	353.1	347.9	11.3	331.0	375.3	9.9	308.0	406.4	8.5	278.0	428.3	7.3
	350 STD	399.7	396.0	11.3	374.9	427.1	9.9	349.0	462.2	8.5	307.4	468.9	7.4
	400 STD	472.4	463.6	11.3	442.8	500.1	9.9	411.9	541.5	8.6	373.1	573.4	7.4
	450 STD	515.7	512.2	11.2	483.6	552.3	9.8	449.9	597.6	8.5	396.3	607.0	7.4
	500 STD	564.1	561.5	11.2	528.9	605.0	9.8	492.0	654.0	8.5	429.1	652.8	7.4

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Table P-2. 60 Hz high efficiency machines in English units

Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Condenser Entering Air Temperature (F) 85 Tons	85 kW input	85 EER	95 Tons	95 kW input	95 EER	105 Ton	105 kW input	105 EER	115 Tons	115 kW input	115 EER
40	140 HIGH	142.9	134.5	11.4	133.3	146.1	9.9	123.4	159.4	8.5	113.1	174.3	7.2
	155 HIGH	156.3	146.0	11.5	145.9	158.8	10.0	135.2	173.4	8.5	124.2	189.7	7.2
	170 HIGH	169.9	157.7	11.6	158.8	171.7	10.0	147.3	187.5	8.6	135.4	205.3	7.3
	185 HIGH	186.1	176.8	11.4	174.1	191.9	9.9	161.7	209.1	8.5	148.9	228.4	7.2
	200 HIGH	202.6	196.1	11.2	189.6	212.1	9.8	176.1	230.6	8.4	162.2	251.4	7.2
	225 HIGH	222.4	216.4	11.2	208.5	234.0	9.8	194.0	254.2	8.5	178.9	277.0	7.2
	250 HIGH	241.0	235.7	11.1	226.1	254.9	9.7	210.6	277.0	8.4	194.4	301.8	7.2
	275 HIGH	276.7	262.5	11.5	259.2	285.0	10.0	241.0	310.7	8.6	222.3	339.4	7.3
	300 HIGH	307.8	302.1	11.1	288.7	326.8	9.7	268.8	355.1	8.4	248.1	387.1	7.2
	350 HIGH	343.3	322.8	11.5	321.4	351.4	9.9	298.7	383.7	8.5	275.3	420.0	7.3
	400 HIGH	409.8	404.1	11.0	384.1	436.7	9.6	357.2	474.2	8.3	329.3	516.6	7.1
42	140 HIGH	148.4	137.3	11.7	138.6	149.0	10.1	128.3	162.3	8.7	117.7	177.3	7.4
	155 HIGH	162.3	149.0	11.7	151.6	161.9	10.2	140.6	176.6	8.7	129.3	193.0	7.4
	170 HIGH	176.4	160.9	11.8	165.0	175.0	10.3	153.1	190.9	8.8	141.0	208.7	7.5
	185 HIGH	193.1	180.5	11.6	180.8	195.7	10.1	168.0	213.0	8.7	154.7	232.4	7.4
	200 HIGH	210.2	200.4	11.4	196.8	216.5	9.9	182.9	235.0	8.6	168.5	256.0	7.3
	225 HIGH	230.8	221.3	11.4	216.4	239.0	10.0	201.4	259.3	8.6	185.8	282.2	7.4
	250 HIGH	250.0	241.2	11.3	234.6	260.5	9.9	218.5	282.7	8.6	201.8	307.7	7.3
	275 HIGH	287.1	268.0	11.7	269.0	290.6	10.2	250.3	316.4	8.8	231.0	345.3	7.5
	300 HIGH	319.1	308.6	11.3	299.4	333.5	9.9	278.8	361.9	8.6	257.5	394.1	7.3
	350 HIGH	356.2	329.4	11.7	333.6	358.1	10.2	310.3	390.6	8.7	286.3	427.0	7.4
	400 HIGH	425.1	412.9	11.2	398.5	445.8	9.8	370.8	483.5	8.5	342.0	526.1	7.2
44	140 HIGH	154.1	140.2	11.9	143.9	151.9	10.3	133.4	165.3	8.9	122.4	180.4	7.5
	155 HIGH	168.4	152.1	12.0	157.5	165.1	10.4	146.1	179.8	8.9	134.4	196.3	7.6
	170 HIGH	183.1	164.2	12.0	171.3	178.4	10.5	159.1	194.4	9.0	146.6	212.3	7.7
	185 HIGH	200.3	184.3	11.8	187.5	199.6	10.3	174.3	216.9	8.9	160.7	236.5	7.6
	200 HIGH	218.0	204.8	11.6	204.2	221.0	10.1	189.8	239.6	8.8	174.9	260.6	7.5
	225 HIGH	239.3	226.3	11.6	224.4	244.1	10.2	208.9	264.6	8.8	192.8	287.6	7.5
	250 HIGH	259.3	246.8	11.5	243.3	266.3	10.1	226.7	288.6	8.7	209.4	313.7	7.5
	275 HIGH	297.5	273.6	11.9	279.0	296.4	10.4	259.7	322.2	8.9	239.8	351.3	7.6
	300 HIGH	330.5	315.3	11.5	310.2	340.3	10.1	289.1	368.9	8.7	267.1	401.2	7.5
	350 HIGH	369.3	336.0	11.9	346.1	364.9	10.4	322.2	397.6	8.9	297.5	434.2	7.6
	400 HIGH	440.5	422.0	11.4	413.1	455.0	10.0	384.6	492.9	8.6	354.9	535.7	7.4

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Table P-2 (Continued). 60 Hz high efficiency machines in English units

Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Condenser Entering Air Temperature (F) 85 Tons	85 kW input	85 EER	95 Tons	95 kW input	95 EER	105 Ton	105 kW input	105 EER	115 Tons	115 kW input	115 EER
	140 HIGH	159.9	143.1	12.1	149.4	154.9	10.5	138.5	168.4	9.1	127.2	183.5	7.7
	155 HIGH	174.7	155.2	12.2	163.4	168.3	10.6	151.7	183.1	9.1	139.7	199.6	7.8
	170 HIGH	189.9	167.6	12.3	177.7	181.8	10.7	165.1	197.9	9.2	152.3	215.9	7.8
	185 HIGH	207.6	188.3	12.0	194.4	203.6	10.5	180.8	221.0	9.0	166.8	240.6	7.7
	200 HIGH	225.9	209.3	11.8	211.6	225.6	10.3	196.8	244.3	8.9	181.4	265.4	7.6
46	225 HIGH	248.0	231.5	11.8	232.6	249.4	10.3	216.6	269.9	9.0	199.9	293.1	7.7
	250 HIGH	268.7	252.6	11.7	252.1	272.2	10.2	234.9	294.6	8.9	217.0	319.9	7.6
	275 HIGH	308.2	279.3	12.1	289.1	302.2	10.5	269.3	328.2	9.1	248.8	357.4	7.8
	300 HIGH	342.1	322.1	11.7	321.2	347.2	10.2	299.4	376.0	8.9	276.8	408.5	7.6
	350 HIGH	382.6	342.9	12.1	358.8	371.9	10.6	334.2	404.8	9.1	308.8	441.5	7.8
	400 HIGH	456.1	431.2	11.6	427.9	464.4	10.1	398.5	502.5	8.8	368.0	545.6	7.5
	140 HIGH	165.8	146.1	12.3	155.0	158.0	10.7	143.7	171.5	9.3	132.1	186.7	7.9
	155 HIGH	181.0	158.5	12.4	169.4	171.6	10.8	157.4	186.4	9.3	145.0	203.1	7.9
	170 HIGH	196.8	171.0	12.5	184.2	185.3	10.9	171.3	201.5	9.4	158.1	219.5	8.0
	185 HIGH	215.0	192.3	12.2	201.4	207.6	10.6	187.4	225.1	9.2	173.0	244.8	7.9
	200 HIGH	233.9	213.9	11.9	219.2	230.3	10.5	203.9	249.0	9.1	188.1	270.2	7.8
48	225 HIGH	256.8	236.8	12.0	240.9	254.8	10.5	224.3	275.4	9.1	207.1	298.7	7.8
	250 HIGH	278.2	258.5	11.8	261.1	278.2	10.4	243.3	300.8	9.0	224.7	326.1	7.7
	275 HIGH	319.0	285.1	12.3	299.3	308.1	10.7	279.0	334.2	9.3	257.9	363.5	7.9
	300 HIGH	353.8	329.0	11.8	332.3	354.2	10.4	309.9	383.2	9.0	286.6	415.8	7.7
	350 HIGH	396.1	349.8	12.3	371.6	379.0	10.7	346.3	412.0	9.3	320.3	448.9	7.9
	400 HIGH	472.0	440.6	11.7	442.9	474.0	10.3	412.7	512.3	9.0	381.3	555.5	7.7
	140 HIGH	171.7	149.2	12.5	160.6	161.2	10.9	149.0	174.8	9.4	137.0	190.0	8.0
	155 HIGH	187.5	161.8	12.6	175.5	174.9	11.0	163.1	189.9	9.5	150.4	206.5	8.1
	170 HIGH	203.7	174.6	12.7	190.8	188.9	11.1	177.6	205.1	9.6	164.0	223.2	8.2
	185 HIGH	222.5	196.3	12.4	208.5	211.8	10.8	194.1	229.4	9.4	179.2	249.1	8.0
	200 HIGH	242.0	218.6	12.1	226.8	235.0	10.6	211.1	253.9	9.2	194.8	275.2	7.9
50	225 HIGH	265.7	242.2	12.1	249.3	260.3	10.7	232.2	281.0	9.3	214.4	304.3	7.9
	250 HIGH	287.9	264.5	12.0	270.2	284.4	10.5	251.7	307.1	9.1	232.5	332.5	7.9
	275 HIGH	329.9	291.1	12.4	309.7	314.2	10.9	288.8	340.4	9.5	267.2	369.8	8.1
	300 HIGH	365.7	336.0	12.0	343.6	361.4	10.5	320.6	390.5	9.2	296.6	423.3	7.9
	350 HIGH	409.8	356.9	12.5	384.7	386.3	10.9	358.7	419.4	9.5	332.0	456.3	8.1
	400 HIGH	488.0	450.2	11.9	458.1	483.8	10.5	427.0	522.2	9.1	394.7	565.7	7.8

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Table P-3. 60 Hz standard efficiency machines in SI units

Evaporator Leaving Water Temperature (C)	Unit Size Model RTAC	Condenser Entering Air Temperature (C) 30 kW cooling	30 kW input	30 COP	35 kW output	35 kW input	35 COP	40 kW output	40 kW input	40 COP	45 kW output	45 kW input	45 COP
5	155 STD	153.5	155.3	3.4	144.0	167.7	3.2	134.3	181.5	2.8	124.3	196.7	2.4
	170 STD	167.6	168.2	3.5	157.5	181.6	3.2	147.1	196.6	2.8	136.4	213.1	2.4
	185 STD	183.0	187.2	3.4	172.1	201.8	3.2	160.8	218.0	2.7	149.1	236.0	2.4
	200 STD	198.9	206.6	3.4	187.0	222.2	3.1	174.7	239.7	2.7	162.0	259.1	2.3
	225 STD	218.6	226.5	3.4	205.8	243.7	3.1	192.5	263.0	2.7	178.8	284.3	2.4
	250 STD	239.0	247.0	3.4	225.1	265.7	3.1	210.6	286.5	2.7	195.7	309.7	2.4
	275 STD	270.0	277.1	3.4	254.4	299.0	3.1	238.2	323.4	2.7	221.5	350.4	2.4
	300 STD	302.6	318.4	3.3	285.1	342.5	3.1	266.9	369.5	2.7	248.1	399.5	2.3
	350 STD	342.5	360.8	3.3	323.0	388.0	3.1	302.7	418.4	2.7	281.7	452.2	2.3
	400 STD	404.5	424.1	3.3	381.1	456.1	3.1	356.7	492.0	2.7	331.4	531.9	2.3
	450 STD	441.5	466.9	3.3	416.2	501.9	3.1	389.9	541.1	2.7	362.6	584.7	2.3
	500 STD	482.5	509.9	3.3	455.1	547.8	3.1	426.4	590.4	2.7	396.7	637.6	2.3
7	140 STD	149.0	148.1	3.5	139.8	159.6	3.3	130.2	172.4	2.8	120.4	186.4	2.4
	155 STD	163.8	161.3	3.5	153.8	173.8	3.3	143.5	187.7	2.9	133.0	203.1	2.5
	170 STD	178.7	174.5	3.6	168.0	188.2	3.3	157.1	203.3	2.9	145.9	219.9	2.5
	185 STD	195.0	194.5	3.5	183.5	209.2	3.3	171.5	225.7	2.8	159.3	243.9	2.5
	200 STD	211.9	214.9	3.4	199.3	230.7	3.2	186.3	248.4	2.8	172.9	268.0	2.4
	225 STD	232.8	235.9	3.4	219.2	253.3	3.2	205.1	272.8	2.8	190.5	294.4	2.4
	250 STD	254.7	257.6	3.5	239.8	276.5	3.2	224.4	297.6	2.8	208.5	321.0	2.4
	275 STD	287.2	287.5	3.4	270.8	309.7	3.2	253.8	334.4	2.8	236.2	361.7	2.5
	300 STD	321.7	330.9	3.4	303.2	355.3	3.2	284.0	382.7	2.8	264.2	413.0	2.4
	350 STD	364.1	375.7	3.4	343.5	403.2	3.2	322.0	434.1	2.8	299.7	468.2	2.4
	400 STD	430.2	440.9	3.4	405.4	473.3	3.2	379.7	509.6	2.8	353.1	550.0	2.4
	450 STD	469.5	486.0	3.4	442.8	521.5	3.2	414.9	561.3	2.8	386.0	605.4	2.4
	500 STD	513.4	531.5	3.4	484.2	570.1	3.2	453.8	613.2	2.8	422.3	660.9	2.4
9	140 STD	158.7	153.9	3.6	148.9	165.5	3.4	138.8	178.4	2.9	128.4	192.6	2.5
	155 STD	174.4	167.6	3.6	163.9	180.2	3.4	153.0	194.3	2.9	141.9	209.7	2.5
	170 STD	190.1	181.2	3.7	178.9	195.0	3.4	167.4	210.2	3.0	155.6	227.0	2.6
	185 STD	207.3	202.1	3.6	195.1	217.0	3.3	182.6	233.6	2.9	169.7	251.9	2.5
	200 STD	225.2	223.5	3.5	211.9	239.5	3.3	198.1	257.4	2.9	184.0	277.2	2.5
	225 STD	247.3	245.6	3.5	232.9	263.3	3.3	218.0	283.0	2.9	202.5	304.7	2.5
	250 STD	270.7	268.7	3.5	254.9	287.8	3.3	238.5	309.2	2.9	221.6	332.8	2.5
	275 STD	304.7	298.3	3.5	287.5	320.8	3.3	253.8	334.4	2.8	251.3	373.3	2.5
	300 STD	341.2	343.9	3.5	321.7	368.6	3.3	284.0	382.7	2.8	280.6	426.9	2.5
	350 STD	386.2	391.1	3.4	364.4	419.1	3.2	322.0	434.1	2.8	318.1	484.8	2.5
	400 STD	456.3	458.2	3.5	430.2	491.0	3.3	379.7	509.6	2.8	375.2	568.6	2.5
	450 STD	498.1	505.9	3.4	469.9	541.9	3.2	414.9	561.3	2.8	409.9	626.7	2.5
	500 STD	544.8	554.1	3.4	513.9	593.2	3.2	453.8	613.2	2.8	448.2	685.0	2.5

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kWo/kWi). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Performance Data

Full Load Performance

Table P-4. 60 Hz high efficiency machines in SI units

Evaporator Leaving Water Temperature (C)	Unit Size Model RTAC	Condenser Entering Air Temperature (C)											
		30			35			40			45		
		kW cooling	kW input	COP	kW output	kW input	COP	kW output	kW input	COP	kW output	kW input	COP
5	140 HIGH	144.7	137.0	3.3	135.9	147.5	3.0	126.9	159.4	2.6	117.5	172.6	2.2
	155 HIGH	158.2	148.7	3.4	148.8	160.4	3.0	139.0	173.4	2.6	129.0	187.9	2.3
	170 HIGH	172.1	160.6	3.4	161.8	173.3	3.0	151.4	187.6	2.6	140.6	203.3	2.3
	185 HIGH	188.4	180.1	3.4	177.4	193.8	3.0	166.1	209.2	2.6	154.4	226.3	2.3
	200 HIGH	205.1	199.7	3.3	193.2	214.3	3.0	180.9	230.8	2.6	168.2	249.3	2.2
	225 HIGH	225.2	220.5	3.4	212.4	236.5	3.0	199.2	254.6	2.6	185.5	274.8	2.2
	250 HIGH	244.0	240.2	3.3	230.4	257.7	2.9	216.2	277.5	2.6	201.5	299.6	2.2
	275 HIGH	280.2	267.4	3.4	264.1	287.8	3.0	247.5	310.8	2.6	230.5	336.3	2.3
	300 HIGH	311.5	307.7	3.3	294.1	330.1	2.9	275.9	355.5	2.6	257.0	383.9	2.2
	350 HIGH	347.5	328.8	3.4	327.5	354.7	3.0	306.8	383.8	2.6	285.6	415.9	2.3
	400 HIGH	414.9	411.5	3.3	391.3	441.2	2.9	366.8	474.9	2.5	341.4	512.4	2.2
7	140 HIGH	154.9	142.1	3.5	145.6	152.8	3.1	136.0	164.8	2.7	126.1	178.2	2.3
	155 HIGH	169.2	154.3	3.6	159.2	166.0	3.1	149.0	179.2	2.7	138.4	193.8	2.4
	170 HIGH	184.0	166.5	3.6	173.2	179.4	3.1	162.1	193.7	2.8	150.8	209.6	2.4
	185 HIGH	201.2	187.0	3.5	189.6	200.8	3.1	177.6	216.3	2.7	165.3	233.6	2.4
	200 HIGH	219.0	207.7	3.4	206.4	222.4	3.1	193.4	239.0	2.7	179.9	257.7	2.3
	225 HIGH	240.5	229.5	3.4	226.9	245.7	3.1	212.8	264.0	2.7	198.3	284.4	2.3
	250 HIGH	260.5	250.3	3.4	246.0	268.1	3.0	230.9	288.0	2.7	215.2	310.3	2.3
	275 HIGH	298.9	277.5	3.5	282.0	298.1	3.1	264.6	321.3	2.7	246.6	347.0	2.4
	300 HIGH	332.0	319.7	3.4	313.5	342.3	3.0	294.4	368.0	2.7	274.5	396.6	2.3
	350 HIGH	371.0	340.8	3.5	349.9	367.0	3.1	328.2	396.3	2.7	305.9	428.7	2.4
	400 HIGH	442.5	427.8	3.4	417.6	457.8	3.0	391.7	491.8	2.6	364.9	529.7	2.3
9	140 HIGH	165.3	147.6	3.7	155.5	158.3	3.2	145.4	170.4	2.8	135.0	183.9	2.5
	155 HIGH	180.6	160.0	3.7	170.0	171.9	3.2	159.2	185.2	2.8	148.0	199.9	2.5
	170 HIGH	196.2	172.7	3.7	184.9	185.7	3.3	173.2	200.2	2.8	161.3	216.1	2.5
	185 HIGH	214.4	194.1	3.6	202.1	208.1	3.2	189.5	223.7	2.8	176.5	241.1	2.4
	200 HIGH	233.3	215.9	3.5	220.0	230.7	3.1	206.2	247.5	2.8	192.0	266.3	2.4
	225 HIGH	256.1	239.0	3.5	241.7	255.4	3.1	226.8	273.8	2.8	211.4	294.4	2.4
	250 HIGH	277.5	261.0	3.5	262.1	278.9	3.1	246.0	299.0	2.8	229.3	321.5	2.4
	275 HIGH	318.2	287.9	3.6	300.4	308.8	3.2	282.0	332.1	2.8	263.1	358.1	2.5
	300 HIGH	352.9	332.1	3.5	333.5	355.0	3.1	313.3	380.9	2.8	292.4	409.8	2.4
	350 HIGH	395.1	353.3	3.7	372.9	379.8	3.2	350.2	409.3	2.8	326.8	441.9	2.5
	400 HIGH	470.8	444.7	3.5	444.5	475.0	3.1	417.2	509.2	2.7	389.0	547.5	2.4

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kWo/kWi). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Table P-5. 50 Hz standard efficiency machines in English units

Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Condenser Entering Air Temperature (F) 85 Tons	85 kW input	85 EER	95 Tons	95 kW input	95 EER	105 Ton	105 kW input	105 EER	115 Tons	115 kW input	115 EER
40	140 STD	134.2	144.4	10.6	124.5	158.0	9.0	114.5	173.1	7.6	104.3	189.7	6.4
	155 STD	146.9	159.5	10.5	136.3	174.0	9.0	125.5	190.1	7.6	114.4	208.0	6.4
	170 STD	159.8	174.7	10.4	148.4	190.1	8.9	136.7	207.4	7.6	124.8	226.6	6.4
	185 STD	176.9	190.6	10.6	164.6	207.3	9.1	152.0	226.1	7.7	139.0	246.8	6.5
	200 STD	194.4	206.8	10.7	181.1	224.8	9.2	167.5	244.9	7.9	153.3	267.2	6.6
	250 STD	235.2	251.7	10.7	219.4	275.1	9.2	203.0	301.2	7.8	185.0	327.9	6.5
	275 STD	262.8	284.5	10.6	245.1	309.7	9.1	226.7	337.9	7.7	206.7	367.2	6.5
	300 STD	299.0	318.8	10.7	279.2	346.5	9.2	258.7	377.6	7.9	232.8	402.2	6.7
	350 STD	325.2	357.0	10.4	302.7	388.8	8.9	279.5	424.4	7.6	255.6	464.0	6.4
	375 STD	359.1	389.7	10.5	335.1	424.1	9.1	310.1	462.6	7.7	281.6	499.7	6.5
	400 STD	395.8	424.5	10.7	369.7	461.3	9.2	342.4	502.5	7.9	308.1	535.3	6.7
42	140 STD	139.1	147.6	10.8	129.0	161.3	9.2	118.8	176.5	7.8	107.1	190.7	6.5
	155 STD	152.2	163.1	10.7	141.3	177.7	9.1	130.1	194.0	7.7	118.1	210.7	6.5
	170 STD	165.4	178.7	10.6	153.7	194.3	9.1	141.7	211.7	7.7	127.6	227.1	6.5
	185 STD	183.1	195.0	10.7	170.4	211.9	9.2	157.4	230.8	7.9	141.9	247.3	6.6
	200 STD	201.2	211.7	10.9	187.5	229.8	9.4	173.4	250.2	8.0	155.0	264.5	6.8
	250 STD	243.3	257.1	10.8	227.0	280.7	9.3	210.1	307.1	7.9	186.8	323.4	6.7
	275 STD	271.8	290.8	10.7	253.5	316.3	9.2	234.5	344.8	7.8	208.1	361.3	6.7
	300 STD	309.1	326.0	10.8	288.8	354.1	9.4	267.6	385.5	8.0	235.1	397.5	6.8
	350 STD	336.3	365.0	10.5	313.2	397.0	9.1	289.3	433.0	7.7	257.7	457.0	6.5
	375 STD	371.3	398.4	10.7	346.5	433.2	9.2	320.8	472.2	7.8	284.7	494.4	6.7
	400 STD	409.3	434.2	10.8	382.4	471.5	9.3	354.3	513.2	8.0	311.1	529.1	6.8
44	140 STD	144.0	150.8	10.9	133.7	164.6	9.3	123.1	180.0	7.9	108.1	187.6	6.7
	155 STD	157.5	166.7	10.8	146.2	181.4	9.3	134.7	197.9	7.9	118.8	206.7	6.6
	170 STD	171.1	182.8	10.7	159.0	198.5	9.2	146.6	216.0	7.8	129.1	224.7	6.6
	185 STD	189.3	199.5	10.9	176.3	216.6	9.4	162.8	235.6	8.0	142.8	243.1	6.8
	200 STD	208.0	216.6	11.0	194.0	235.0	9.5	179.4	255.6	8.1	156.5	261.2	6.9
	250 STD	251.4	262.6	11.0	234.7	286.5	9.4	217.3	313.1	8.0	188.4	318.3	6.8
	275 STD	280.7	297.3	10.8	261.9	323.0	9.3	242.4	351.8	8.0	209.2	354.6	6.8
	300 STD	319.3	333.5	11.0	298.4	361.9	9.5	276.6	393.7	8.1	235.9	389.3	7.0
	350 STD	347.6	373.2	10.7	323.8	405.5	9.2	299.2	441.7	7.8	259.5	449.0	6.7
	375 STD	383.6	407.4	10.8	358.1	442.5	9.3	331.7	481.9	7.9	287.6	488.3	6.8
	400 STD	422.9	444.1	10.9	395.2	481.9	9.4	366.3	524.1	8.1	313.9	521.8	6.9

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Table P-5 (Continued). 50 Hz standard efficiency machines in English units

Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Condenser Entering Air Temperature (F) 85 Tons	85 kW input	85 EER	95 Tons	95 kW input	95 EER	105 Ton	105 kW input	105 EER	115 Tons	115 kW input	115 EER
	140 STD	149.0	154.1	11.1	138.4	168.0	9.5	127.5	183.5	8.0	109.0	184.2	6.8
	155 STD	162.9	170.5	10.9	151.3	185.3	9.4	139.4	201.8	8.0	119.3	202.2	6.8
	170 STD	176.8	187.0	10.8	164.4	202.8	9.3	151.6	220.4	7.9	130.0	220.6	6.8
	185 STD	195.6	204.1	11.0	182.2	221.3	9.5	168.4	240.6	8.1	144.3	239.8	6.9
	200 STD	215.0	221.7	11.1	200.5	240.3	9.6	185.5	261.1	8.2	157.0	255.6	7.1
46	250 STD	259.6	268.2	11.1	242.4	292.3	9.5	224.5	319.2	8.1	189.8	312.6	7.0
	275 STD	289.8	304.0	10.9	270.5	329.9	9.4	250.4	358.9	8.1	211.2	349.4	7.0
	300 STD	329.6	341.1	11.1	308.1	369.8	9.6	285.7	402.0	8.2	237.7	382.8	7.2
	350 STD	358.9	381.5	10.8	334.5	414.1	9.3	309.2	450.5	7.9	262.2	443.0	6.8
	375 STD	396.0	416.5	10.9	369.8	452.0	9.4	342.6	491.7	8.0	288.8	478.0	7.0
	400 STD	436.7	454.3	11.0	408.1	492.5	9.5	378.4	535.2	8.2	316.4	513.3	7.1
	140 STD	154.0	157.4	11.2	143.1	171.5	9.6	131.9	187.1	8.2	109.7	180.4	7.0
	155 STD	168.3	174.3	11.1	156.4	189.3	9.5	144.2	205.9	8.1	120.4	198.8	7.0
	170 STD	182.6	191.2	10.9	169.8	207.1	9.4	156.6	224.9	8.0	131.3	217.4	7.0
	185 STD	202.0	208.8	11.1	188.2	226.2	9.6	173.9	245.6	8.2	145.6	236.0	7.1
	200 STD	222.0	226.8	11.2	207.1	245.7	9.7	191.6	266.7	8.3	158.3	251.1	7.3
48	250 STD	267.8	273.9	11.2	250.2	298.3	9.7	229.7	321.0	8.3	192.0	308.6	7.2
	275 STD	299.0	310.7	11.0	279.1	336.9	9.5	256.3	361.6	8.2	213.0	343.5	7.2
	300 STD	340.1	348.8	11.2	317.9	378.0	9.7	289.7	399.6	8.4	240.7	378.2	7.3
	350 STD	370.3	390.0	10.9	345.2	422.8	9.4	319.2	459.5	8.0	264.7	436.2	7.0
	375 STD	408.5	425.8	11.0	381.6	461.7	9.5	352.1	498.6	8.2	292.8	473.1	7.1
	400 STD	450.6	464.7	11.1	421.2	503.4	9.6	383.7	532.1	8.3	318.7	503.7	7.3
	140 STD	159.2	160.9	11.4	147.9	175.0	9.7	134.3	186.6	8.3	111.0	177.7	7.2
	155 STD	173.8	178.2	11.2	161.6	193.3	9.6	147.0	205.8	8.3	121.2	194.9	7.2
	170 STD	188.5	195.6	11.1	175.3	211.6	9.5	159.1	223.7	8.2	131.8	212.3	7.2
	185 STD	208.5	213.6	11.2	194.2	231.1	9.7	176.5	244.2	8.4	146.8	231.8	7.3
	200 STD	229.2	232.1	11.3	213.8	251.2	9.8	192.6	261.3	8.5	160.3	247.9	7.5
50	250 STD	276.2	279.7	11.3	258.1	304.4	9.8	231.6	315.6	8.5	194.2	304.1	7.4
	275 STD	308.2	317.6	11.1	287.8	344.1	9.6	257.8	354.5	8.4	214.5	337.6	7.3
	300 STD	350.6	356.8	11.3	327.8	386.3	9.8	290.9	390.8	8.6	241.9	371.5	7.5
	350 STD	381.8	398.6	11.0	356.0	431.7	9.5	321.4	451.3	8.2	266.4	427.8	7.2
	375 STD	421.1	435.3	11.1	393.5	471.6	9.6	354.1	489.0	8.4	294.6	464.2	7.3
	400 STD	464.6	475.3	11.2	434.4	514.5	9.7	385.3	520.5	8.5	320.4	494.8	7.5

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Table P-6. 50 Hz high efficiency machines in English units

Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Condenser Entering Air Temperature (F) 85 Tons	85 kW input	85 EER	95 Tons	95 kW input	95 EER	105 Ton	105 kW input	105 EER	115 Tons	115 kW input	115 EER
40	140 HIGH	140.0	137.2	11.5	130.3	150.0	9.8	120.3	164.2	8.3	110.0	180.0	7.0
	155 HIGH	152.5	151.6	11.3	141.9	165.1	9.7	131.0	180.4	8.3	119.8	197.4	6.9
	170 HIGH	165.1	166.0	11.2	153.6	180.4	9.6	141.9	196.7	8.2	129.8	214.9	6.9
	185 HIGH	183.2	182.2	11.3	170.9	197.9	9.8	158.3	215.6	8.4	145.2	235.3	7.1
	200 HIGH	201.5	198.5	11.5	188.3	215.4	9.9	174.6	234.4	8.5	160.5	255.6	7.2
	250 HIGH	245.1	246.8	11.3	228.6	269.0	9.7	211.5	293.9	8.2	193.9	321.5	6.9
	275 HIGH	274.1	272.9	11.4	256.0	296.3	9.8	237.2	322.8	8.4	217.8	352.4	7.1
	300 HIGH	309.4	305.8	11.5	289.8	331.8	10.0	269.3	361.0	8.5	248.1	393.7	7.3
	350 HIGH	337.3	340.5	11.2	314.5	370.1	9.6	291.0	403.5	8.2	266.7	440.9	6.9
	375 HIGH	374.6	374.9	11.3	350.0	406.9	9.8	324.5	443.0	8.4	298.1	483.4	7.1
	400 HIGH	411.9	408.8	11.4	385.5	443.1	9.9	357.9	481.8	8.5	329.3	525.0	7.2
42	140 HIGH	145.4	140.1	11.7	135.3	152.9	10.0	125.0	167.3	8.5	114.4	183.2	7.2
	155 HIGH	158.1	154.8	11.5	147.3	168.5	9.9	136.0	183.9	8.4	124.5	201.0	7.1
	170 HIGH	171.2	169.7	11.4	159.4	184.3	9.8	147.2	200.7	8.4	134.8	219.0	7.1
	185 HIGH	189.8	186.3	11.5	177.2	202.1	10.0	164.1	219.9	8.5	150.7	239.9	7.2
	200 HIGH	208.9	203.1	11.6	195.2	220.1	10.1	181.1	239.3	8.6	166.5	260.7	7.3
	250 HIGH	254.0	252.2	11.4	236.9	274.6	9.8	219.3	299.7	8.4	196.9	319.2	7.1
	275 HIGH	283.9	279.0	11.5	265.2	302.6	10.0	245.9	329.3	8.6	225.9	359.0	7.2
	300 HIGH	320.4	312.7	11.6	300.1	338.9	10.1	279.0	368.4	8.7	257.1	401.4	7.4
	350 HIGH	349.5	348.0	11.3	326.0	377.8	9.8	301.8	411.4	8.4	276.8	449.0	7.1
	375 HIGH	388.1	383.3	11.5	362.8	415.6	9.9	336.5	452.0	8.5	309.3	492.7	7.2
	400 HIGH	426.8	418.1	11.6	399.5	452.7	10.0	371.0	491.8	8.6	341.6	535.5	7.3
44	140 HIGH	150.8	143.1	11.9	140.4	156.0	10.2	129.8	170.4	8.7	118.9	186.4	7.3
	155 HIGH	163.9	158.2	11.7	152.7	172.0	10.1	141.2	187.5	8.6	129.3	204.7	7.2
	170 HIGH	177.4	173.5	11.5	165.2	188.1	10.0	152.7	204.6	8.5	139.8	223.1	7.2
	185 HIGH	196.6	190.5	11.7	183.6	206.4	10.1	170.1	224.4	8.7	156.2	244.5	7.3
	200 HIGH	216.4	207.7	11.8	202.3	224.9	10.2	187.7	244.2	8.8	172.6	265.9	7.5
	250 HIGH	262.9	257.6	11.6	245.4	280.3	10.0	227.2	305.6	8.5	197.5	312.2	7.3
	275 HIGH	293.9	285.2	11.7	274.6	309.0	10.1	254.7	335.9	8.7	234.1	365.8	7.4
	300 HIGH	331.5	319.7	11.8	310.6	346.1	10.3	288.9	376.0	8.8	266.4	409.3	7.5
	350 HIGH	361.8	355.7	11.5	337.7	385.7	10.0	312.7	419.5	8.5	287.0	457.3	7.2
	375 HIGH	401.8	391.9	11.6	375.7	424.4	10.1	348.6	461.2	8.6	320.6	502.2	7.3
	400 HIGH	441.8	427.6	11.7	413.6	462.6	10.2	384.3	502.1	8.8	354.0	546.2	7.5

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Table P-6 (Continued). 50 Hz high efficiency machines in English units

Evaporator Leaving Water Temperature (F)	Unit Size Model RTAC	Condenser Entering Air Temperature (F) 85 Tons	85 kW input	85 EER	95 Tons	95 kW input	95 EER	105 Ton	105 kW input	105 EER	115 Tons	115 kW input	115 EER
46	140 HIGH	156.2	146.1	12.1	145.6	159.1	10.4	134.7	173.6	8.9	123.4	189.7	7.5
	155 HIGH	169.8	161.6	11.9	158.2	175.5	10.2	146.3	191.1	8.7	134.1	208.4	7.4
	170 HIGH	183.6	177.4	11.7	171.1	192.1	10.1	158.2	208.7	8.7	145.0	227.2	7.3
	185 HIGH	203.5	194.7	11.8	190.1	210.8	10.3	176.2	228.9	8.8	161.9	249.2	7.5
	200 HIGH	223.9	212.4	12.0	209.4	229.7	10.4	194.4	249.3	8.9	178.9	271.2	7.6
	250 HIGH	272.0	263.2	11.8	253.9	286.1	10.1	235.2	311.7	8.7	199.0	306.6	7.5
	275 HIGH	304.0	291.5	11.9	284.2	315.5	10.3	263.6	342.6	8.8	242.4	372.8	7.5
	300 HIGH	342.8	326.8	11.9	321.3	353.6	10.4	298.9	383.7	9.0	275.7	417.4	7.6
	350 HIGH	374.3	363.5	11.7	349.5	393.7	10.1	323.8	427.8	8.7	297.3	465.8	7.3
	375 HIGH	415.6	400.6	11.8	388.7	433.5	10.2	360.8	470.5	8.8	332.0	511.9	7.5
	400 HIGH	457.0	437.3	11.9	428.0	472.7	10.3	397.8	512.6	8.9	366.6	557.1	7.6
48	140 HIGH	161.8	149.1	12.3	150.9	162.2	10.6	139.6	176.9	9.0	128.0	193.1	7.6
	155 HIGH	175.7	165.1	12.0	163.8	179.1	10.4	151.6	194.8	8.9	139.0	212.2	7.5
	170 HIGH	190.0	181.3	11.9	177.1	196.1	10.3	163.8	212.8	8.8	150.2	231.4	7.5
	185 HIGH	210.5	199.1	12.0	196.6	215.3	10.4	182.3	233.6	8.9	167.6	253.9	7.6
	200 HIGH	231.6	217.3	12.1	216.7	234.8	10.5	201.2	254.5	9.1	185.2	276.6	7.7
	250 HIGH	281.2	269.0	11.9	253.9	286.1	10.1	243.4	317.8	8.8	200.2	300.4	7.6
	275 HIGH	314.2	298.0	12.0	284.2	315.5	10.3	272.7	349.4	9.0	250.8	379.8	7.6
	300 HIGH	354.2	334.1	12.1	321.3	353.6	10.4	309.1	391.6	9.1	283.8	423.0	7.7
	350 HIGH	386.9	371.4	11.8	349.5	393.7	10.1	335.0	436.1	8.8	307.7	474.3	7.5
	375 HIGH	429.6	409.6	11.9	388.7	433.5	10.2	373.3	480.0	8.9	343.6	521.7	7.6
	400 HIGH	472.4	447.3	12.0	428.0	472.7	10.3	411.5	523.3	9.0	375.7	561.1	7.7
50	140 HIGH	167.5	152.3	12.5	156.2	165.5	10.7	144.6	180.2	9.2	132.7	196.5	7.8
	155 HIGH	181.7	168.7	12.2	169.5	182.8	10.6	156.9	198.5	9.0	144.0	216.0	7.7
	170 HIGH	196.4	185.4	12.0	183.1	200.3	10.4	169.4	217.0	8.9	155.4	235.7	7.6
	185 HIGH	217.5	203.6	12.1	203.3	219.9	10.5	188.6	238.3	9.1	173.4	258.8	7.7
	200 HIGH	239.4	222.2	12.2	224.0	239.9	10.7	208.0	259.9	9.2	189.8	278.5	7.8
	250 HIGH	290.4	274.8	12.1	271.3	298.1	10.4	246.7	314.9	9.0	201.3	293.5	7.9
	275 HIGH	324.5	304.6	12.2	303.5	328.9	10.6	281.8	356.4	9.1	257.1	382.2	7.8
	300 HIGH	365.7	341.6	12.2	343.0	368.9	10.7	319.3	399.7	9.2	286.5	417.3	7.9
	350 HIGH	399.7	379.6	12.0	373.4	410.2	10.4	346.3	444.6	8.9	318.3	482.9	7.6
	375 HIGH	443.7	418.7	12.1	415.3	452.1	10.5	385.8	489.7	9.0	347.3	515.3	7.8
	400 HIGH	488.0	457.4	12.1	457.3	493.5	10.6	425.4	534.2	9.1	379.3	553.4	7.9

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.00010.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. EER = Energy Efficiency Ratio (Btu/watt-hour). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 10°F.
6. Ambient temperatures 115°F and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Table P-7. 50 Hz standard efficiency machines in SI units

Evaporator Leaving Water Temperature (C)	Unit Size Model RTAC	Condenser Entering Air Temperature (C) 30 kW cooling	30 kW input	30 COP	35 kW output	35 kW input	35 COP	40 kW output	40 kW input	40 COP	45 kW output	45 kW input	45 COP
5	140 STD	135.7	147.3	4.8	126.8	159.6	4.1	117.7	173.2	3.6	108.4	188.0	3.0
	155 STD	148.5	162.7	4.7	138.8	175.8	4.1	128.9	190.3	3.6	118.8	206.3	3.0
	170 STD	161.5	178.2	4.7	151.1	192.2	4.1	140.4	207.7	3.6	129.5	224.8	3.0
	185 STD	178.7	194.4	4.8	167.5	209.6	4.2	156.0	226.5	3.6	144.1	244.9	3.1
	200 STD	196.4	211.0	4.8	184.3	227.3	4.2	171.8	245.4	3.7	159.0	265.3	3.1
	250 STD	237.7	256.6	4.8	223.2	277.9	4.2	208.2	301.4	3.6	192.8	327.1	3.1
	275 STD	265.5	290.1	4.8	249.3	313.0	4.1	232.5	338.4	3.6	215.2	366.3	3.1
	300 STD	302.1	325.0	4.8	284.0	350.3	4.2	265.3	378.3	3.7	245.9	409.0	3.2
	350 STD	328.5	364.0	4.7	308.0	392.9	4.1	286.8	424.9	3.6	265.0	460.1	3.0
	375 STD	362.8	397.3	4.7	340.8	428.6	4.1	318.0	463.3	3.6	294.5	501.4	3.1
	400 STD	400.0	432.8	4.8	376.0	466.4	4.2	351.2	503.5	3.6	325.5	544.3	3.1
7	140 STD	144.5	153.1	4.9	135.1	165.6	4.3	125.5	179.4	3.7	115.1	193.1	3.1
	155 STD	158.0	169.3	4.9	147.8	182.6	4.2	137.3	197.3	3.6	126.6	213.5	3.1
	170 STD	171.6	185.5	4.8	160.6	199.8	4.2	149.4	215.5	3.6	137.3	231.4	3.1
	185 STD	189.9	202.5	4.9	178.1	218.0	4.3	165.9	235.1	3.7	152.0	250.8	3.2
	200 STD	208.7	219.9	5.0	195.9	236.6	4.3	182.7	255.0	3.8	166.0	268.4	3.2
	250 STD	252.2	266.5	4.9	237.0	288.2	4.3	221.3	312.1	3.7	200.0	327.3	3.2
	275 STD	281.6	301.8	4.9	264.5	325.1	4.3	246.8	350.9	3.7	223.6	368.0	3.2
	300 STD	320.4	338.5	4.9	301.3	364.3	4.3	281.6	392.8	3.8	251.5	403.0	3.3
	350 STD	348.6	378.7	4.8	327.0	408.1	4.2	304.7	440.5	3.6	277.0	465.2	3.1
	375 STD	384.8	413.5	4.9	361.6	445.4	4.2	337.7	480.7	3.7	306.0	504.0	3.2
	400 STD	424.3	450.8	4.9	399.1	485.0	4.3	372.9	523.0	3.7	332.9	536.5	3.3
9	140 STD	153.5	159.1	5.1	143.6	171.9	4.4	133.5	185.8	3.8	116.9	187.1	3.3
	155 STD	167.7	176.1	5.0	156.9	189.7	4.3	145.9	204.6	3.7	128.4	206.7	3.3
	170 STD	181.9	193.2	4.9	170.4	207.6	4.3	158.5	223.5	3.7	139.5	225.2	3.3
	185 STD	201.3	210.9	5.0	188.8	226.7	4.4	176.0	244.1	3.8	154.9	245.2	3.3
	200 STD	221.3	229.2	5.1	207.8	246.2	4.4	193.8	265.1	3.8	168.8	261.8	3.4
	250 STD	267.0	276.8	5.1	251.0	298.9	4.4	234.5	323.3	3.8	202.9	317.3	3.4
	275 STD	298.0	313.9	5.0	280.0	337.7	4.4	261.4	363.9	3.8	226.5	356.9	3.3
	300 STD	339.0	352.4	5.0	318.9	378.8	4.4	298.2	408.0	3.9	255.3	391.8	3.4
	350 STD	369.0	394.0	4.9	346.3	423.7	4.3	322.9	456.6	3.7	281.2	452.1	3.3
	375 STD	407.1	430.2	5.0	382.8	462.7	4.3	357.6	498.7	3.8	309.9	488.5	3.3
	400 STD	449.1	469.4	5.0	422.5	504.5	4.4	395.0	543.3	3.8	338.1	521.8	2.2

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kWo/kWi). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Table P-8. 50 Hz high efficiency machines in SI units

Evaporator Leaving Water Temperature (C)	Unit Size Model RTAC	Condenser Entering Air Temperature (C) 30 kW cooling	30 kW input	30 COP	35 kW output	35 kW input	35 COP	40 kW output	40 kW input	40 COP	45 kW output	45 kW input	45 COP
5	140 HIGH	141.7	139.9	4.9	132.8	151.4	4.2	123.6	164.2	3.7	114.3	178.3	3.1
	155 HIGH	154.2	154.5	4.8	144.6	166.8	4.2	134.6	180.6	3.6	124.5	195.7	3.1
	170 HIGH	167.0	169.2	4.7	156.5	182.3	4.1	145.8	197.0	3.6	134.7	213.1	3.1
	185 HIGH	185.3	185.7	4.8	174.1	200.0	4.2	162.5	215.9	3.7	150.6	233.5	3.2
	200 HIGH	203.9	202.4	4.9	191.8	217.7	4.3	179.3	234.8	3.7	166.4	253.7	3.2
	250 HIGH	247.9	251.6	4.8	232.8	271.8	4.2	217.2	294.2	3.6	201.1	318.8	3.1
	275 HIGH	277.2	278.1	4.8	260.6	299.5	4.2	243.4	323.2	3.7	225.8	349.5	3.2
	300 HIGH	313.0	311.7	4.9	295.0	335.3	4.3	276.3	361.6	3.8	257.0	390.7	3.2
	350 HIGH	341.1	347.0	4.7	320.3	373.9	4.1	298.8	403.9	3.6	276.7	437.1	3.1
	375 HIGH	378.9	382.1	4.8	356.4	411.2	4.2	333.1	443.7	3.7	309.1	479.6	3.2
	400 HIGH	416.7	416.7	4.8	392.4	447.9	4.3	367.3	482.7	3.7	341.3	521.1	3.2
7	140 HIGH	151.4	145.2	5.0	142.0	156.9	4.4	132.3	169.9	3.8	122.5	184.1	3.2
	155 HIGH	164.6	160.5	5.0	154.4	173.0	4.3	143.9	186.9	3.8	133.2	202.2	3.2
	170 HIGH	178.0	176.1	4.9	167.0	189.3	4.3	155.6	204.1	3.7	144.0	220.5	3.2
	185 HIGH	197.4	193.3	5.0	185.5	207.7	4.4	173.3	223.9	3.8	160.8	241.7	3.2
	200 HIGH	217.2	210.7	5.0	204.4	226.3	4.4	191.2	243.7	3.8	177.6	262.9	3.3
	250 HIGH	263.9	261.5	4.9	247.9	282.0	4.3	231.5	304.8	3.7	211.3	323.3	3.2
	275 HIGH	295.0	289.3	5.0	277.5	310.9	4.4	259.4	335.0	3.8	240.8	361.7	3.3
	300 HIGH	332.8	324.3	5.0	313.9	348.4	4.4	294.2	375.2	3.8	273.8	404.8	3.3
	350 HIGH	363.2	360.8	4.9	341.2	388.1	4.3	318.6	418.4	3.7	295.3	452.0	3.2
	375 HIGH	403.4	397.6	4.9	379.6	427.1	4.3	355.0	460.1	3.8	329.7	496.5	3.2
	400 HIGH	443.6	433.8	5.0	418.0	465.6	4.4	391.4	501.0	3.8	364.0	540.2	3.3
9	140 HIGH	161.3	150.7	5.2	151.4	162.6	4.5	141.2	175.7	3.9	130.9	190.1	3.4
	155 HIGH	175.2	166.8	5.1	164.4	179.5	4.4	153.4	193.5	3.9	142.1	209.0	3.3
	170 HIGH	189.4	183.2	5.0	177.7	196.6	4.4	165.7	211.5	3.8	153.5	228.0	3.3
	185 HIGH	209.8	201.1	5.0	197.3	215.8	4.4	184.4	232.1	3.9	171.2	250.2	3.4
	200 HIGH	231.0	219.4	5.1	217.4	235.3	4.5	203.4	253.0	3.9	189.1	272.6	3.4
	250 HIGH	280.3	271.7	5.0	263.5	292.7	4.4	246.2	315.8	3.8	214.4	313.6	3.4
	275 HIGH	313.3	300.9	5.1	294.8	322.8	4.4	275.7	347.3	3.9	256.1	374.2	3.4
	300 HIGH	353.2	337.4	5.1	333.2	361.9	4.5	312.5	389.3	3.9	291.0	419.4	3.4
	350 HIGH	385.7	375.1	5.0	362.6	402.7	4.4	338.8	433.4	3.8	314.3	467.2	3.3
	375 HIGH	428.3	413.6	5.0	403.3	443.6	4.4	377.5	477.1	3.9	350.8	514.1	3.4
	400 HIGH	471.1	451.7	5.1	444.1	484.0	4.5	416.1	520.1	3.9	387.2	560.1	2.3

Notes:
1. Ratings based on sea level altitude and evaporator fouling factor of 0.0176.
2. Consult Trane representative for performance at temperatures outside of the ranges shown.
3. kW input is for compressors only.
4. COP = Coefficient of Performance (kWo/kWi). Power inputs include compressors, condenser fans and control power.
5. Ratings are based on an evaporator temperature drop of 5.6°C.
6. Ambient temperatures 40°C and greater reflect the high ambient condenser option.
7. Interpolation between points is permissible. Extrapolation is not permitted.
8. Rated in accordance with ARI Standard 550/590-98.

Performance Data

Part Load Performance

Table P-9. ARI part-load performance for 60 Hz standard efficiency machines in English units

Unit Size	Full Load Tons	Full Load EER	IPLV
140	138.2	9.7	**12.9**
155	152.1	9.8	**13.3**
170	166.2	9.9	**13.0**
185	181.5	9.7	**12.8**
200	197.2	9.6	**12.7**
225	216.9	9.6	**13.0**
250	237.3	9.6	**12.6**
275	268.0	9.7	**13.3**
300	300.2	9.6	**13.2**
350	340.0	9.6	**13.2**
400	401.3	9.6	**13.7**
450	438.3	9.6	**13.9**
500	479.3	9.6	**13.8**

Notes:
1. IPLV values are rated in accordance with ARI Standard 550/590-98.
2. EER and IPLV values include compressors, condenser fans and control kW.

Table P-10. ARI part-load performance for 60 Hz high efficiency machines in English units

Unit Size	Full Load Tons	Full Load EER	IPLV
140	143.9	10.3	**13.3**
155	157.5	10.4	**13.6**
170	171.3	10.5	**13.4**
185	187.5	10.3	**13.2**
200	204.2	10.1	**13.0**
225	224.4	10.2	**13.3**
250	243.3	10.1	**12.8**
275	279.0	10.4	**13.8**
300	310.2	10.1	**13.6**
350	346.1	10.4	**14.5**
400	413.1	10.0	**13.9**

Table P-11. ARI part-load performance for 50 Hz standard efficiency machines in English units

Unit Size	Full Load Tons	Full Load EER	IPLV
140	133.7	9.3	**13.4**
155	146.2	9.3	**13.5**
170	159.0	9.2	**13.3**
185	176.3	9.4	**13.8**
200	194.0	9.5	**13.2**
250	234.8	9.6	**15.4**
275	262.1	9.5	**14.7**
300	298.6	9.7	**14.1**
350	324.0	9.4	**14.6**
375	358.4	9.5	**15.0**
400	395.5	9.6	**14.9**

Notes:
1. IPLV values are rated in accordance with ARI Standard 550/590-98.
2. EER and IPLV values include compressors, condenser fans and control kW.

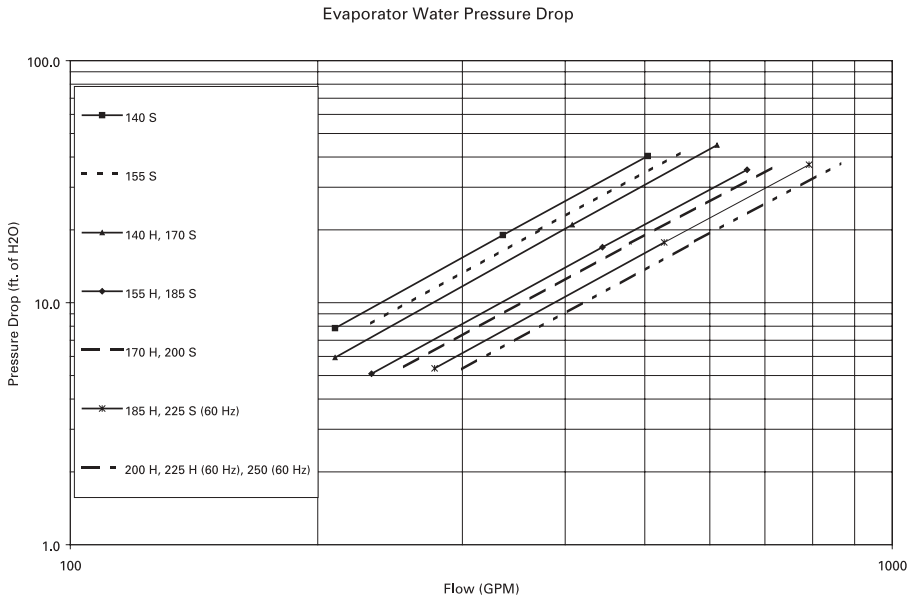
Table P-12. ARI part-load performance for 50 Hz high efficiency machines in English units

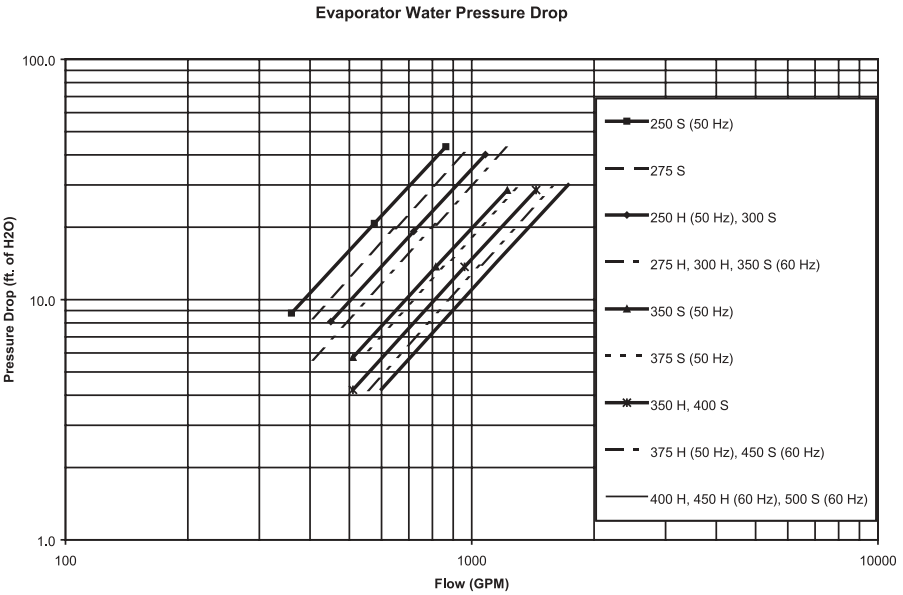
Unit Size	Full Load Tons	Full Load EER	IPLV
140	140.4	10.2	**14.2**
155	152.7	10.1	**14.2**
170	165.2	10.0	**14.0**
185	183.6	10.1	**14.5**
200	202.3	10.2	**13.9**
250	245.5	10.2	**15.9**
275	274.8	10.3	**15.6**
300	310.8	10.5	**14.7**
350	337.9	10.1	**15.2**
375	375.9	10.3	**15.6**
400	413.9	10.4	**15.5**

Performance Data

Adjustment Factors

Figure P-1. Evaporator water pressure drop, all units





Electrical Data and Connection

Table E-1. Unit electrical data for standard efficiency at all ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time		Compressor (Each)			Fans (Each)			
Unit Size	Rated Voltage	Power Conns (1)	MCA (3) Ckt 1/Ckt 2	Breaker or MOP (11) Ckt 1/Ckt 2	Delay or RDE (4) Ckt 1/Ckt 2	Qty	RLA (5) Ckt 1/Ckt 2	XLRA (8) Ckt 1/Ckt 2	YLRA (8) Ckt 1/Ckt 2	Qty. Ckt 1/Ckt 2	kW	FLA	Control kW (7)
	200/60/3	1	660	800	800	2	270-270	NA	487-487	8	1.5	6.5	0.83
	200/60/3	2	364/364	600/600	450/450	2	270/270	NA	487/487	4/4	1.5	6.5	0.83
	230/60/3	1	581	800	700	2	235-235	NA	427-427	8	1.5	6.5	0.83
	230/60/3	2	320/320	500/500	400/400	2	235/235	NA	427/427	4/4	1.5	6.5	0.83
RTAC	380/60/3	1	348	450	400	2	142-142	801-801	260-260	8	1.5	3.5	0.83
140	380/60/3	2	192/192	300/300	250/250	2	142/142	801/801	260/260	4/4	1.5	3.5	0.83
	460/60/3	1	288	400	350	2	118-118	652-652	212-212	8	1.5	2.8	0.83
	460/60/3	2	159/159	250/250	200/200	2	118/118	652/652	212/212	4/4	1.5	2.8	0.83
	575/60/3	1	230	300	300	2	94-94	520-520	172-172	8	1.5	2.3	0.83
	575/60/3	2	127/127	200/200	175/175	2	94/94	520/520	172/172	4/4	1.5	2.3	0.83
	400/50/3	1	333	450	400	2	138-138	774-774	259-259	8	0.8	2.8	0.83
	400/50/3	2	184/184	300/300	250/250	2	138/138	774/774	259/259	4/4	0.8	2.8	0.83
	200/60/3	1	730	1000	1000	2	320-270	NA	600-701	9	1.5	6.5	0.83
	200/60/3	2	433/364	700/600	600/450	2	320/270	NA	600/701	5/4	1.5	6.5	0.83
	230/60/3	1	641	800	800	2	278-235	NA	506-571	9	1.5	6.5	0.83
	230/60/3	2	380/320	600/500	450/400	2	278/235	NA	506/571	5/4	1.5	6.5	0.83
RTAC	380/60/3	1	380	500	450	2	168-142	973-801	316-260	9	1.5	3.5	0.83
155	380/60/3	2	228/192	350/300	300/250	2	168/142	973/801	316/260	5/4	1.5	3.5	0.83
	460/60/3	1	317	450	400	2	139-118	774-652	252-212	9	1.5	2.8	0.83
	460/60/3	2	188/159	300/250	225/200	2	139/118	774/652	252/212	5/4	1.5	2.8	0.83
	575/60/3	1	254	350	300	2	111-94	631-528	205-172	9	1.5	2.3	0.83
	575/60/3	2	150/127	250/200	200/175	2	111/94	631/528	205/172	5/4	1.5	2.3	0.83
	400/50/3	1	373	500	450	2	168-138	896-796	291-259	9	0.8	2.8	0.83
	400/50/3	2	224/184	350/300	300/250	2	168/138	896/796	291/259	5/4	0.8	2.8	0.83
	200/60/3	1	785	1000	1000	2	320-320	NA	600-600	10	1.5	6.5	0.83
	200/60/3	2	433/433	700/700	600/600	2	320/320	NA	600/600	5/5	1.5	6.5	0.83
	230/60/3	1	691	800	800	2	278-278	NA	506-506	10	1.5	6.5	0.83
	230/60/3	2	380/380	600/600	450/450	2	278/278	NA	506/506	5/5	1.5	6.5	0.83
RTAC	380/60/3	1	413	500	500	2	168-168	973-973	316-316	10	1.5	3.5	0.83
170	380/60/3	2	228/228	350/350	300/300	2	168/168	973/973	316/316	5/5	1.5	3.5	0.83
	460/60/3	1	341	450	400	2	139-139	774-774	252-252	10	1.5	2.8	0.83
	460/60/3	2	188/188	300/300	225/225	2	139/139	774/774	252/252	5/5	1.5	2.8	0.83
	575/60/3	1	273	350	350	2	111-111	631-631	205-205	10	1.5	2.3	0.83
	575/60/3	2	150/150	250/250	200/200	2	111/111	631/631	205/205	5/5	1.5	2.3	0.83
	400/50/3	1	406	500	450	2	168-168	896-896	291-291	10	0.8	2.8	0.83
	400/50/3	2	224/224	350/350	300/300	2	168/168	896/896	291/291	5/5	0.8	2.8	0.83

Electrical Data and Connection

Table E-1 (Continued). Unit electrical data for standard efficiency at all ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time			Compressor (Each)		Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
	200/60/3	1	874	1200	1000	2	386-320	NA	701-600	11	1.5	6.5	0.83
	200/60/3	2	522/433	800/700	700/600	2	386/320	NA	701/600	6/5	1.5	6.5	0.83
	230/60/3	1	770	1000	1000	2	336-278	NA	571-506	11	1.5	6.5	0.83
	230/60/3	2	459/380	700/600	600/450	2	336/278	NA	571/506	6/5	1.5	6.5	0.83
RTAC	380/60/3	1	460	600	600	2	203-168	1060-973	345-316	11	1.5	3.5	0.83
185	380/60/3	2	275/228	450/350	350/300	2	203/168	1060/973	345/316	6/5	1.5	3.5	0.83
	460/60/3	1	380	500	450	2	168-139	878-774	285-252	11	1.5	2.8	0.83
	460/60/3	2	227/188	350/300	300/225	2	168/139	878/774	285/252	6/5	1.5	2.8	0.83
	575/60/3	1	304	400	350	2	134-111	705-631	229-205	11	1.5	2.3	0.83
	575/60/3	2	181/150	300/250	225/200	2	134/111	705/631	229/205	6/5	1.5	2.3	0.83
	400/50/3	1	446	600	500	2	198-168	1089-896	354-291	11	0.8	2.8	0.83
	400/50/3	2	264/224	450/350	350/300	2	198/168	1089/896	354/291	6/5	0.8	2.8	0.83
	200/60/3	1	947	1200	1200	2	386-386	NA	701-701	12	1.5	6.5	0.83
	200/60/3	2	522/522	800/800	700/700	2	386/386	NA	701/701	6/6	1.5	6.5	0.83
	230/60/3	1	834	1000	1000	2	336-336	NA	571-571	12	1.5	6.5	0.83
	230/60/3	2	459/459	700/700	600/600	2	336/336	NA	571/571	6/6	1.5	6.5	0.83
RTAC	380/60/3	1	499	700	600	2	203-203	1060-1060	345-345	12	1.5	3.5	0.83
200	380/60/3	2	275/275	450/450	350/350	2	203/203	1060/1060	345/345	6/6	1.5	3.5	0.83
	460/60/3	1	412	500	500	2	168-168	878-878	285-285	12	1.5	2.8	0.83
	460/60/3	2	227/227	350/350	300/300	2	168/168	878/878	285/285	6/6	1.5	2.8	0.83
	575/60/3	1	329	450	400	2	134-134	705-705	229-229	12	1.5	2.3	0.83
	575/60/3	2	181/181	300/300	225/225	2	134/134	705/705	229/229	6/6	1.5	2.3	0.83
	400/50/3	1	479	600	600	2	198-198	1089-1089	354-354	12	0.8	2.8	0.83
	400/50/3	2	264/264	450/450	350/350	2	198/198	1089/1089	354/354	6/6	0.8	2.8	0.83
	200/60/3	1	1045	1200	1200	2	459-386	NA	821-701	13	1.5	6.5	0.83
	200/60/3	2	620/522	1000/800	800/700	2	459/386	NA	821/701	7/6	1.5	6.5	0.83
	230/60/3	1	920	1200	1200	2	399-336	NA	691-571	13	1.5	6.5	0.83
	230/60/3	2	545/459	800/700	700/600	2	399/336	NA	691/571	7/6	1.5	6.5	0.83
RTAC	380/60/3	1	551	700	700	2	242-203	1306-1060	424-345	13	1.5	3.5	0.83
225	380/60/3	2	327/275	500/450	400/350	2	242/203	1306/1060	424/345	7/6	1.5	3.5	0.83
	460/60/3	1	454	600	600	2	200-168	1065-878	346-285	13	1.5	2.8	0.83
	460/60/3	2	270/227	450/350	350/300	2	200/168	1065/878	346/285	7/6	1.5	2.8	0.83
	575/60/3	1	364	500	450	2	160-134	853-705	277-229	13	1.5	2.3	0.83
	575/60/3	2	216/181	350/300	300/225	2	160/134	853/705	277/229	7/6	1.5	2.3	0.83
	200/60/3	1	1124	1200	1200	2	459-459	NA	821-821	14	1.5	6.5	0.83
	200/60/3	2	620/620	1000/1000	800/800	2	459/459	NA	821/821	7/7	1.5	6.5	0.83
	230/60/3	1	989	1200	1200	2	399-399	NA	691-691	14	1.5	6.5	0.83
	230/60/3	2	545/545	800/800	700/700	2	399/399	NA	691/691	7/7	1.5	6.5	0.83
RTAC	380/60/3	1	594	800	700	2	242-242	1306-1306	424-424	14	1.5	3.5	0.83
250	380/60/3	2	327/327	500/500	400/400	2	242/242	1306/1306	424/424	7/7	1.5	3.5	0.83
	460/60/3	1	489	600	600	2	200-200	1065-1065	346-346	14	1.5	2.8	0.83
	460/60/3	2	270/270	450/450	350/350	2	200/200	1065/1065	346/346	7/7	1.5	2.8	0.83
	575/60/3	1	392	500	500	2	160-160	853-853	277-277	14	1.5	2.3	0.83
	575/60/3	2	216/216	350/350	300/300	2	160/160	853/853	277/277	7/7	1.5	2.3	0.83
	400/50/3	1	563	700	700	3	138-138-198	796-796-1089	259-259-354	14	0.8	2.8	1.2
	400/50/3	2	333/265	450/450	400/350	3	138/138/198	796/796/1089	259/259/354	8/6	0.8	2.8	1.2

Electrical Data and Connection

Table E-1 (Continued). Unit electrical data for standard efficiency at all ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time			Compressor (Each)		Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
	200/60/3	1	NA										
	200/60/3	2	785/522	1000/800	1000/700	3	320/320/386	NA	600/600/701	10/6	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	681/459	800/700	800/600	3	278/278/336	NA	506/506/571	10/6	1.5	6.5	1.2
RTAC	380/60/3	1	NA										
275	380/60/3	2	413/275	500/450	500/350	3	168/168/203	973/973/1060	316/316/345	10/6	1.5	3.5	1.2
	460/60/3	1	533	700	600	3	139-139-168	774-774-878	252-252-285	16	1.5	2.8	1.2
	460/60/3	2	341/227	450/350	400/300	3	139/139/168	774/774/878	252/252/285	10/6	1.5	2.8	1.2
	575/60/3	1	427	500	500	3	111-111-134	631-631-705	205-205-229	16	1.5	2.3	1.2
	575/60/3	2	273/182	350/300	350/225	3	111/111/134	631/631/705	205/205/229	10/6	1.5	2.3	1.2
	400/50/3	1	629	800	700	3	168-168-198	896-896-1089	291-291-354	16	0.8	2.8	1.2
	400/50/3	2	406/265	500/450	450/350	3	168/168/198	896/896/1089	291/291/254	10/6	0.8	2.8	1.2
	200/60/3	1	NA										
	200/60/3	2	947/522	1200/800	1200/700	3	386/386/386	NA	701/701/701	12/6	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	834/459	1000/700	1000/600	3	336/336/336	NA	571/571/571	12/6	1.5	6.5	1.2
RTAC	380/60/3	1	NA										
300	380/60/3	2	499/275	700/450	600/350	3	203/203/203	1060/1060/1060	345/345/345	12/6	1.5	3.5	1.2
	460/60/3	1	597	700	700	3	168-168-168	878-878-878	285-285-285	18	1.5	2.8	1.2
	460/60/3	2	412/227	500/350	500/300	3	168/168/168	878/878/878	285/285/285	12/6	1.5	2.8	1.2
	575/60/3	1	477	600	600	3	134-134-134	705-705-705	229-229-229	18	1.5	2.3	1.2
	575/60/3	2	330/182	450/300	400/225	3	134/134/134	705/705/705	229/229/229	12/6	1.5	2.3	1.2
	400/50/3	1	694	800	800	3	198-198-198	1089-1089-1089	354-354-354	18	0.8	2.8	1.2
	400/50/3	2	480/265	600/450	600/350	3	198/198/198	1089/1089/1089	354/354/354	12/6	0.8	2.8	1.2
	200/60/3	1	NA										
	200/60/3	2	1124/522	1200/800	1200/700	3	459/459/386	NA	821/821/701	14/6	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	989/459	1200/700	1200/600	3	399/399/336	NA	691/691/571	14/6	1.5	6.5	1.2
RTAC	380/60/3	1	NA										
350	380/60/3	2	594/275	800/450	700/350	3	242/242/203	973/973/973/973	424/424/345	14/6	1.5	3.5	1.2
	460/60/3	1	674	800	800	3	200-200-168	774-774-774-774	346-346-285	20	1.5	2.8	1.2
	460/60/3	2	490/227	600/350	600/300	3	200/200/168	774/774/774/774	346/346/285	14/6	1.5	2.8	1.2
	575/60/3	1	540	700	600	3	160-160-134	631-631-631-631	277-277-229	20	1.5	2.3	1.2
	575/60/3	2	393/182	500/300	450/225	3	160/160/134	631/631/631/631	277/277/229	14/6	1.5	2.3	1.2
	400/50/3	1	770	800	800	4	168-168-168-168	896-896-896-896	291-291-291-291	20	0.8	2.8	1.59
	400/50/3	2	406/406	500/500	450/450	4	168/168/168/168	896/896/896/896	291/291/291/291	10/10	0.8	2.8	1.59
RTAC	400/50/3	1	844	1000	1000	4	198-198-168-168	1089-1089-896-896	354-354-291-291	22	0.8	2.8	1.59
375	400/50/3	2	480/406	600/500	600/450	4	198/198/168/168	1089/1089/896/896	354/354/291/291	12/10	0.8	2.8	1.59
	200/60/3	1	NA										
	200/60/3	2	947/947	1200/1200	1200/1200	4	386/386/386/386	NA	701/701/701/701	12/12	1.5	6.5	1.59
	230/60/3	1	NA										
	230/60/3	2	834/834	1000/1000	1000/1000	4	336/336/336/336	NA	571/571/571/571	12/12	1.5	6.5	1.59
RTAC	380/60/3	1	NA										
400	380/60/3	2	499/499	700/700	600/600	4	203/203/203/203	1060/1060/1060/1060	345/345/345/345	12/12	1.5	3.5	1.59
	460/60/3	1	782	800	800	4	168-168-168-168	878-878-878-878	285-285-285-285	24	1.5	2.8	1.59
	460/60/3	2	412/412	500/500	500/500	4	168/168/168/168	878/878/878/878	285/285/285/285	12/12	1.5	2.8	1.59
	575/60/3	1	628	700	700	4	134-134-134-134	705-705-705-705	229-229-229-229	24	1.5	2.3	1.59
	575/60/3	2	330/330	450/450	400/400	4	134/134/134/134	705/705/705/705	229/229/229/229	12/12	1.5	2.3	1.59
	400/50/3	1	909	1000	1000	4	198-198-198-198	1089-1089-1089-1089	354-354-354-354	24	0.8	2.8	1.59
	400/50/3	2	480/480	600/600	600/600	4	198/198/198/198	1089/1089/1089/1089	354/354/354/354	12/12	0.8	2.8	1.59

Electrical Data and Connection

Table E-1 (Continued). Unit electrical data for standard efficiency at all ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time		Compressor (Each)			Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
	200/60/3	1	NA										
	200/60/3	2	1124/947	1200/1200	1200/1200	4	459/459/386/386	NA	821/821/701/701	14/12	1.5	6.5	1.59
	230/60/3	1	NA										
	230/60/3	2	989/834	1200/1000	1200/1000	4	399/399/336/336	NA	691/691/571/571	14/12	1.5	6.5	1.59
RTAC	380/60/3	1	NA										
450	380/60/3	2	594/499	800/700	700/600	4	242/242/203/203	1306/1306/1060/1060	424/424/345/345	14/12	1.5	3.5	1.59
	460/60/3	1	859	1000	1000	4	200-200-168-168	1065-1065-878-878	346-346-285-285	26	1.5	2.8	1.59
	460/60/3	2	490/412	600/500	600/500	4	200/200/168/168	1065/1065/878/878	346/346/285/285	14/12	1.5	2.8	1.59
	575/60/3	1	688	800	800	4	160-160-134-134	853-853-705-705	277-277-229-229	26	1.5	2.3	1.59
	575/60/3	2	393/330	500/450	450/400	4	160/160/134/134	853/853/705/705	277/277/229/229	14/12	1.5	2.3	1.59
	200/60/3	1	NA										
	200/60/3	2	1124/1124	1200/1200	1200/1200	4	459/459/459/459	NA	821/821/821/821	14/14	1.5	6.5	1.59
	230/60/3	1	NA										
	230/60/3	2	989/989	1200/1200	1200/1200	4	399/399/399/399	NA	691/691/691/691	14/14	1.5	6.5	1.59
RTAC	380/60/3	1	NA										
500	380/60/3	2	594/594	800/800	700/700	4	242/242/242/242	1306/1306/1306/1306	424/424/424/424	14/14	1.5	3.5	1.59
	460/60/3	1	929	1000	100	4	200-200-200-200	1065-1065-1065-1065	346-346-346-346	28	1.5	2.8	1.59
	460/60/3	2	490/490	600/600	600/600	4	200/200/200/200	1065/1065/1065/1065	346/346/346/346	14/14	1.5	2.8	1.59
	575/60/3	1	745	800	800	4	160-160-160-160	853-853-853-853	277-277-277-277	28	1.5	2.3	1.59
	575/60/3	2	393/393	500/500	450/450	4	160/160/160/160	853/853/853/853	277/277/277/277	14/14	1.5	2.3	1.59

Notes:
1. As standard, all units have single point power connection. Optional dual point power connections are available.
2. Max Fuse or HACR type breaker = 225 percent of the largest compressor RLA plus 100 percent of the second compressor RLA, plus the sum of the condenser fan FLA per NEC 440-22. Use FLA per circuit, NOT FLA for the entire unit).
3. MCA - Minimum Circuit Ampacity - 125 percent of largest compressor RLA plus 100 percent of the second compressor RLA plus the sum of the condenser fans FLAs per NEC 440-33.
4. RECOMMENDED TIME DELAY OR DUAL ELEMENT (RDE) FUSE SIZE: 150 percent of the largest compressor RLA plus 100 percent of the second compressor RLA and the sum of the condenser fan FLAs.
5. RLA - Rated Load Amps - rated in accordance with UL Standard 1995.
6. Local codes may take precedence.
7. Control kW includes operational controls only. Does not include evaporator heaters.
8. XLRA - Locked Rotor Amps - based on full winding (x-line) start units. YLRA for wye-delta starters is ~1/3 of LRA of x-line units.
9. VOLTAGE UTILIZATION RANGE:

Rated Voltage	Utilization Range
200/60/3	180-220
230/60/3	208-254
380/60/3	342-418
460/60/3	414-506
575/60/3	516-633
400/50/3	360-440

10. A separate 115/60/1, 20 amp or 220/50/1, 15 amp customer provided power connection is needed to power the evaporator heaters (1640 watts).
11. If factory circuit breakers are supplied with the chiller, then these values represent Maximum Overcurrent Protection (MOP).
12. When the circuit breaker option is ordered, two circuit breakers will be provided (one per circuit) for both single and dual point power.
13. Motor kW is for standard fans. Low noise fans at 50 Hz are rated at 1.1 kW/fan.

Electrical Data and Connection

Table E-2. Unit electrical data for high efficiency at std. ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time			Compressor (Each)		Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
	200/60/3	1	648	800	800	2	259-259	NA	487-487	10	1.5	6.5	0.83
	200/60/3	2	356/356	600/600	450/450	2	259/259	NA	487/487	5/5	1.5	6.5	0.83
	230/60/3	1	572	700	700	2	225-225	NA	427-427	10	1.5	6.5	0.83
	230/60/3	2	314/314	500/500	400/400	2	225/225	NA	427/427	5/5	1.5	6.5	0.83
RTAC	380/60/3	1	341	450	400	2	136-136	801-801	260-260	10	1.5	3.5	0.83
140	380/60/3	2	188/188	300/300	225/225	2	136/136	801/801	260/260	5/5	1.5	3.5	0.83
	460/60/3	1	282	350	350	2	113-113	652-652	212-212	10	1.5	2.8	0.83
	460/60/3	2	155/155	250/250	200/200	2	113/113	652/652	212/212	5/5	1.5	2.8	0.83
	575/60/3	1	226	300	250	2	90-90	520-520	172-172	10	1.5	2.3	0.83
	575/60/3	2	124/124	200/200	150/150	2	90/90	520/520	172/172	5/5	1.5	2.3	0.83
	400/50/3	1	325	450	400	2	132-132	774-774	259-259	10	0.8	2.8	0.83
	400/50/3	2	179/179	300/300	225/225	2	132/132	774/774	259/259	5/5	0.8	2.8	0.83
	200/60/3	1	712	1000	800	2	305-259	NA	600-487	11	1.5	6.5	0.83
	200/60/3	2	421/356	700/600	500/450	2	305/259	NA	600/487	6/5	1.5	6.5	0.83
	230/60/3	1	628	800	700	2	265-225	NA	506-427	11	1.5	6.5	0.83
	230/60/3	2	371/314	600/500	450/400	2	265/225	NA	506/427	6/5	1.5	6.5	0.83
RTAC	380/60/3	1	376	500	416	2	161-136	973-801	316-260	11	1.5	3.5	0.83
155	380/60/3	2	222/188	350/300	300/225	2	161/136	973/801	316/260	6/5	1.5	3.5	0.83
	460/60/3	1	310	400	350	2	133-113	774-652	252-212	11	1.5	2.8	0.83
	460/60/3	2	183/155	300/250	225/200	2	133/113	774/652	252/212	6/5	1.5	2.8	0.83
	575/60/3	1	248	350	300	2	106-90	631-528	205-172	11	1.5	2.3	0.83
	575/60/3	2	146/124	250/200	175/150	2	106/90	631/528	205/172	6/5	1.5	2.3	0.83
	400/50/3	1	363	500	450	2	160-132	896-796	291-259	11	0.8	2.8	0.83
	400/50/3	2	217/179	350/300	300/225	2	160/132	896/796	291/259	6/5	0.8	2.8	0.83
	200/60/3	1	765	1000	1000	2	305-305	NA	600-600	12	1.5	6.5	0.83
	200/60/3	2	421/421	700/700	500/500	2	305/305	NA	600/600	6/6	1.5	6.5	0.83
	230/60/3	1	675	800	800	2	265-265	NA	506-506	12	1.5	6.5	0.83
	230/60/3	2	371/371	600/600	450/450	2	265/265	NA	506/506	6/6	1.5	6.5	0.83
RTAC	380/60/3	1	404	500	450	2	161-161	973-973	316-316	12	1.5	3.5	0.83
170	380/60/3	2	222/222	350/350	300/300	2	161/161	973/973	316/316	6/6	1.5	3.5	0.83
	460/60/3	1	333	450	400	2	133-133	774-774	252-252	12	1.5	2.8	0.83
	460/60/3	2	183/183	300/300	225/225	2	133/133	774/774	252/252	6/6	1.5	2.8	0.83
	575/60/3	1	266	350	300	2	106-106	631-631	205-205	12	1.5	2.3	0.83
	575/60/3	2	146/146	250/250	175/175	2	106/106	631/631	205/205	6/6	1.5	2.3	0.83
	400/50/3	1	394	500	450	2	160-160	896-896	291-291	12	0.8	2.8	0.83
	400/50/3	2	217/217	350/350	300/300	2	160/160	896/896	291/291	6/6	0.8	2.8	0.83

Electrical Data and Connection

Table E-2 (Continued). Unit electrical data for high efficiency at std. ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time			Compressor (Each)		Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
	200/60/3	1	856	1200	1000	2	373-305	NA	701-600	13	1.5	6.5	0.83
	200/60/3	2	512/421	800/700	700/500	2	373/305	NA	701/600	7/6	1.5	6.5	0.83
	230/60/3	1	755	1000	1000	2	324-265	NA	571-506	13	1.5	6.5	0.83
	230/60/3	2	451/371	700/600	600/450	2	324/265	NA	571/506	7/6	1.5	6.5	0.83
RTAC	380/60/3	1	452	600	500	2	196-161	1060-973	345-316	13	1.5	3.5	0.83
185	380/60/3	2	270/222	450/350	350/300	2	196/161	1060/973	345/316	7/6	1.5	3.5	0.83
	460/60/3	1	372	500	450	2	162-133	878-774	285-252	13	1.5	2.8	0.83
	460/60/3	2	222/183	350/300	300/225	2	162/133	878/774	285/252	7/6	1.5	2.8	0.83
	575/60/3	1	298	400	350	2	130-106	705-631	229-205	13	1.5	2.3	0.83
	575/60/3	2	179/146	300/250	225/175	2	130/106	705/631	229/205	7/6	1.5	2.3	0.83
	400/50/3	1	433	600	500	2	189-160	1089-896	354-291	13	0.8	2.8	0.83
	400/50/3	2	256/217	400/350	350/300	2	189/160	1089/896	354/291	7/6	0.8	2.8	0.83
	200/60/3	1	931	1200	1200	2	373-373	NA	701-701	14	1.5	6.5	0.83
	200/60/3	2	512/512	800/800	700/700	2	373/373	NA	701/701	7/7	1.5	6.5	0.83
	230/60/3	1	820	1000	1000	2	324-324	NA	571-571	14	1.5	6.5	0.83
	230/60/3	2	451/451	700/700	600/600	2	324/324	NA	571/571	7/7	1.5	6.5	0.83
RTAC	380/60/3	1	490	600	600	2	196-196	1060-1060	345-345	14	1.5	3.5	0.83
200	380/60/3	2	270/270	450/450	350/350	2	196/196	1060/1060	345/345	7/7	1.5	3.5	0.83
	460/60/3	1	404	500	450	2	162-162	878-878	285-285	14	1.5	2.8	0.83
	460/60/3	2	222/222	350/350	300/300	2	162/162	878/878	285/285	7/7	1.5	2.8	0.83
	575/60/3	1	325	450	400	2	130-130	705-705	229-229	14	1.5	2.3	0.83
	575/60/3	2	179/179	300/300	225/225	2	130/130	705/705	229/229	7/7	1.5	2.3	0.83
	400/50/3	1	464	600	600	2	189-189	1089-1089	354-354	14	0.8	2.8	0.83
	400/50/3	2	256/256	400/400	350/350	2	189/189	1089/1089	354/354	7/7	0.8	2.8	0.83
	200/60/3	1	1023	1200	1200	2	447-373	NA	821-701	14	1.5	6.5	0.83
	200/60/3	2	611/506	1000/800	800/600	2	447/373	NA	821/701	8/6	1.5	6.5	0.83
	230/60/3	1	900	1200	1000	2	388-224	NA	691-571	14	1.5	6.5	0.83
	230/60/3	2	537/544	800/700	700/600	2	388/324	NA	691/571	8/6	1.5	6.5	0.83
RTAC	380/60/3	1	539	700	600	2	235-196	1306-1060	424-345	14	1.5	3.5	0.83
225	380/60/3	2	322/266	500/450	400/350	2	235/196	1306/1060	424/345	8/6	1.5	3.5	0.83
	460/60/3	1	444	600	500	2	194-162	1065-878	346-285	14	1.5	2.8	0.83
	460/60/3	2	265/220	450/350	350/300	2	194/162	1065/878	346/285	8/6	1.5	2.8	0.83
	575/60/3	1	356	500	400	2	155-130	853-705	277-229	14	1.5	2.3	0.83
	575/60/3	2	213/177	350/300	300/225	2	155/130	853/705	277/229	8/6	1.5	2.3	0.83

Electrical Data and Connection

Table E-2 (Continued). Unit electrical data for high efficiency at std. ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time			Compressor (Each)		Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
	200/60/3	1	1110	1200	1200	2	447-447	NA	821-821	16	1.5	6.5	0.83
	200/60/3	2	611/611	1000/1000	800/800	2	447/447	NA	821/821	8/8	1.5	6.5	0.83
	230/60/3	1	977	1200	1200	2	388-388	NA	691-691	16	1.5	6.5	0.83
	230/60/3	2	537/537	800/800	700/700	2	388/388	NA	691/691	8/8	1.5	6.5	0.83
RTAC	380/60/3	1	585	800	700	2	235-235	1306-1306	424-424	16	1.5	3.5	0.83
250	380/60/3	2	322/322	500/500	400/400	2	235/235	1306/1306	424/424	8/8	1.5	3.5	0.83
	460/60/3	1	482	600	600	2	194/-194	1065-1065	346-346	16	1.5	2.8	0.83
	460/60/3	2	265/265	450/450	350/350	2	194/194	1065/1065	346/346	8/8	1.5	2.8	0.83
	575/60/3	1	386	500	450	2	155-155	853-853	277-277	794	1.5	2.3	0.83
	575/60/3	2	213/213	350/350	300/300	2	155/155	853/853	277/277	8/8	1.5	2.3	0.83
	400/50/3	1	546	700	600	3	132-132-189	796-796-1089	259-259-354	16	0.8	2.8	0.75
	400/50/3	2	325/254	450/400	400/350	3	132/132/189	796/796/1089	259/259/354	10/6	0.8	2.8	0.75
	200/60/3	1	NA										
	200/60/3	2	765/506	1000/800	1000/600	3	305/305/373	NA	600/600/701	12/6	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	675/444	800/700	800/600	3	265/265/324	NA	506/506/571	12/6	1.5	6.5	1.2
RTAC	380/60/3	1	NA										
275	380/60/3	2	405/266	500/450	450/350	3	161/161/196	973/973/1060	316/316/345	12/6	1.5	3.5	1.2
	460/60/3	1	519	600	600	3	133-133-162	774-774-878	252-252-285	18	1.5	2.8	1.2
	460/60/3	2	333/220	450/350	400/300	3	133/133/162	77/-774/878	252/252/285	12/6	1.5	2.8	1.2
	575/60/3	1	416	500	450	3	106-106-130	631-631-705	205-205-229	18	1.5	2.3	1.2
	575/60/3	2	267/177	350/300	300/225	3	106/106/130	631/631/705	205/205/229	12/6	1.5	2.3	1.2
	400/50/3	1	607	700	700	3	160-160-189	896-896-1089	291-291-354	18	0.8	2.8	1.2
	400/50/3	2	394/254	500/400	450/350	3	160/160/189	896/896/1089	291/291/254	12/6	0.8	2.8	1.2
	200/60/3	1	NA										
	200/60/3	2	931/506	1200/800	1200/600	3	373/373/373	NA	701/701/701	14/6	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	820/444	1000/700	1000/600	3	324/324/324	NA	571/571/571	14/6	1.5	6.5	1.2
RTAC	380/60/3	1	NA										
300	380/60/3	2	490/266	600/450	600/350	3	196/196/196	1060/1060/1060	345/345/345	14/6	1.5	3.5	1.2
	460/60/3	1	583	700	700	3	162-162 - 162	878-878-878	285-285-285	20	1.5	2.8	1.2
	460/60/3	2	404/220	500/350	450/300	3	162/162/162	878/878/878	285/285/285	14/6	1.5	2.8	1.2
	575/60/3	1	469	500	500	3	130-130-130	705-705-705	229-229-229	20	1.5	2.3	1.2
	575/60/3	2	325/177	450/300	400/225	3	130/130/130	705/705/705	229/229/229	14/6	1.5	2.3	1.2
	400/50/3	1	671	800	800	3	189-189-189	1089-1089-1089	354-354-354	20	0.8	2.8	1.2
	400/50/3	2	465/254	600/400	600/350	3	189/189/189	1089/1089/1089	354/354/354	14/6	0.8	2.8	1.2
	200/60/3	1	NA										
	200/60/3	2	765/765	1000/1000	1000/1000	4	305/305/305/305	NA	600/600/600/600	12/12	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	675/675	800/800	800/800	4	265/265/265/265	NA	506/506/506/506	12/12	1.5	6.5	1.2
RTAC	380/60/3	1	NA										
350	380/60/3	2	405/405	500/500	450/450	4	161/161/161/161	973/973/973/973	316/316/316/316	12/12	1.5	3.5	1.2
	460/60/3	1	633	700	700	4	133-133-133-133	774-774-774-774	252-252-252-252	24	1.5	2.8	1.2
	460/60/3	2	333/333	450/450	400/400	4	133/133/133/133	774/774/774/774	252/252/252/252	12/12	1.5	2.8	1.2
	575/60/3	1	506	600	600	4	106-106-106-106	631-631-631-631	205-205-205-205	24	1.5	2.3	1.2
	575/60/3	2	267/267	350/350	300/300	4	106/106/106/106	631/631/631/631	205/205/205/205	12/12	1.5	2.3	1.2
	400/50/3	1	748	800	800	4	160-160-160-160	896-896-896-896	291-291-291-291	24	0.8	2.8	1.59
	400/50/3	2	394/394	500/500	450/450	4	160/160/160/160	896/896/896/896	291/291/291/291	12/12	0.8	2.8	1.59

Electrical Data and Connection

Table E-2 (Continued). Unit electrical data for high efficiency at std. ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time		Compressor (Each)			Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
RTAC	400/50/3	1	819	1000	##	4	189-189-160-160	1089-1089-896-896	354-354-291-291	26	0.8	2.8	1.59
375	400/50/3	2	465/394	600/500	600/450	4	189/189/160/160	1089/1089/896/896	254/254/291/291	14/12	0.8	2.8	1.59
	200/60/3	1	NA										
	200/60/3	2	931/931	1200/1200	1200/1200	4	373/373/373/373	NA	701/701/701/701	14/14	1.5	6.5	1.59
	230/60/3	1	NA										
	230/60/3	2	820/820	1000/1000	1000/1000	4	324/324/324/324	NA	571/571/571/571	14/14	1.5	6.5	1.59
RTAC	380/60/3	1	NA										
400	380/60/3	2	490/490	600/600	600/600	4	196/196/196/196	1060/1060/1060/1060	345/345/345/345	14/14	1.5	3.5	1.59
	460/60/3	1	767	800	800	4	162-162-162-162	878-878-878-878	285-285-285-285	28	1.5	2.8	1.59
	460/60/3	2	404/404	500/500	450/450	4	162/162/162/162	878/878/878/878	285/285/285/285	14/14	1.5	2.8	1.59
	575/60/3	1	617	700	700	4	130-130-130-130	705-705-705-705	229-229-229-229	28	1.5	2.3	1.59
	575/60/3	2	325/325	450/450	400/400	4	130/130/130/130	705/705/705/705	229/229/229/229	14/14	1.5	2.3	1.59
	400/50/3	1	882	1000	1000	4	189-189-189-189	1089-1089-1089-1089	354-354-354-354	28	0.8	2.8	1.59
	400/50/3	2	465/465	600/600	600/600	4	189/189/189/189	1089/1089/1089/1089	354/354/354/354	14/14	0.8	2.8	1.59

Notes:

1. As standard, all units have single point power connection. Optional dual point power connections are available.
2. Max Fuse or HACR type breaker = 225 percent of the largest compressor RLA plus 100 percent of the second compressor RLA, plus the sum of the condenser fan FLA per NEC 440-22. Use FLA per circuit, NOT FLA for the entire unit).
3. MCA - Minimum Circuit Ampacity - 125 percent of largest compressor RLA plus 100 percent of the second compressor RLA plus the sum of the condenser fans FLAs per NEC 440-33.
4. RECOMMENDED TIME DELAY OR DUAL ELEMENT (RDE) FUSE SIZE: 150 percent of the largest compressor RLA plus 100 percent of the second compressor RLA and the sum of the condenser fan FLAs.
5. RLA - Rated Load Amps - rated in accordance with UL Standard 1995.
6. Local codes may take precedence.
7. Control kW includes operational controls only. Does not include evaporator heaters.
8. XLRA - Locked Rotor Amps - based on full winding (x-line) start units. YLRA for wye-delta starters is ~1/3 of LRA of x-line units.
9. VOLTAGE UTILIZATION RANGE:

Rated Voltage	Utilization Range
200/60/3	180-220
230/60/3	208-254
380/60/3	342-418
460/60/3	414-506
575/60/3	516-633
400/50/3	360-440

10. A separate 115/60/1, 20 amp or 220/50/1, 15 amp customer provided power connection is needed to power the evaporator heaters (1640 watts).
11. If factory circuit breakers are supplied with the chiller, then these values represent Maximum Overcurrent Protection (MOP).
12. When the circuit breaker option is ordered, two circuit breakers will be provided (one per circuit) for both single and dual point power.
13. Motor kW is for standard fans. Low noise fans at 50 Hz are rated at 1.1 kW/fan.

Electrical Data and Connection

Table E-3. Unit electrical data for high efficiency at high ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time			Compressor (Each)		Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
	200/60/3	1	673	800	800	2	270-270	NA	487-487	10	1.5	6.5	0.83
	200/60/3	2	370/370	600/600	450/450	2	270/270	NA	487/487	5/5	1.5	6.5	0.83
	230/60/3	1	594	700	700	2	235-235	NA	427-427	10	1.5	6.5	0.83
	230/60/3	2	327/327	500/500	400/400	2	235/235	NA	427/427	5/5	1.5	6.5	0.83
RTAC	380/60/3	1	355	400	400	2	142-142	801-801	260-260	10	1.5	3.5	0.83
140	380/60/3	2	195/195	300/300	250/250	2	142/142	801/801	260/260	5/5	1.5	3.5	0.83
	460/60/3	1	294	400	350	2	118-118	652-652	212-212	10	1.5	2.8	0.83
	460/60/3	2	162/162	250/250	200/200	2	118/118	652/652	212/212	5/5	1.5	2.8	0.83
	575/60/3	1	235	300	300	2	94-94	520-520	172-172	10	1.5	2.3	0.83
	575/60/3	2	129/129	200/200	175/175	2	94/94	520/520	172/172	5/5	1.5	2.3	0.83
	400/50/3	1	339	450	400	2	138-138	774-774	259-259	10	0.8	2.8	0.83
	400/50/3	2	187/187	300/300	225/225	2	138/138	774/774	259/259	5/5	0.8	2.8	0.83
	200/60/3	1	742	1000	1000	2	320-270	NA	600-487	11	1.5	6.5	0.83
	200/60/3	2	439/370	700/600	600/450	2	320/270	NA	600/487	6/5	1.5	6.5	0.83
	230/60/3	1	654	800	800	2	278-235	NA	506-427	11	1.5	6.5	0.83
	230/60/3	2	387/327	600/500	500/400	2	278/235	NA	506/427	6/5	1.5	6.5	0.83
RTAC	380/60/3	1	391	500	450	2	168-142	973-801	316-260	11	1.5	3.5	0.83
155	380/60/3	2	231/195	350/300	300/250	2	168/142	973/801	316/260	6/5	1.5	3.5	0.83
	460/60/3	1	323	450	400	2	139-118	774-652	252-212	11	1.5	2.8	0.83
	460/60/3	2	191/162	300/250	225/200	2	139/118	774/652	252/212	6/5	1.5	2.8	0.83
	575/60/3	1	258	350	300	2	111-94	631-528	205-172	11	1.5	2.3	0.83
	575/60/3	2	153/129	250/200	200/175	2	111/94	631/528	205/172	6/5	1.5	2.3	0.83
	400/50/3	1	379	500	450	2	168-138	896-796	291-259	11	0.8	2.8	0.83
	400/50/3	2	227/187	350/300	300/225	2	168/138	896/796	291/259	6/5	0.8	2.8	0.83
	200/60/3	1	798	1000	1000	2	320-320	NA	600-600	12	1.5	6.5	0.83
	200/60/3	2	439/439	700/700	600/600	2	320/320	NA	600/600	6/6	1.5	6.5	0.83
	230/60/3	1	704	800	800	2	278-278	NA	506-506	12	1.5	6.5	0.83
	230/60/3	2	387/387	600/600	500/500	2	278/278	NA	506/506	6/6	1.5	6.5	0.83
RTAC	380/60/3	1	420	500	500	2	168-168	973-973	316-316	12	1.5	3.5	0.83
170	380/60/3	2	231/231	350/350	300/300	2	168/168	973/973	316/316	6/6	1.5	3.5	0.83
	460/60/3	1	346	450	400	2	139-139	774-774	252-252	12	1.5	2.8	0.83
	460/60/3	2	191/191	300/300	225/225	2	139/139	774/774	252/252	6/6	1.5	2.8	0.83
	575/60/3	1	277	350	350	2	111-111	631-631	205-205	12	1.5	2.3	0.83
	575/60/3	2	153/153	250/250	200/200	2	111/111	631/631	205/205	6/6	1.5	2.3	0.83
	400/50/3	1	412	500	500	2	168-168	896-896	291-291	12	0.8	2.8	0.83
	400/50/3	2	227/227	350/350	300/300	2	168/168	896/896	291/291	6/6	0.8	2.8	0.83

Electrical Data and Connection

Table E-3 (Continued). Unit electrical data for high efficiency at high ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time			Compressor (Each)		Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
	200/60/3	1	887	1200	1000	2	386-320	NA	701-600	13	1.5	6.5	0.83
	200/60/3	2	528/439	800/700	700/600	2	386/320	NA	701/600	7/6	1.5	6.5	0.83
	230/60/3	1	783	1000	1000	2	336-278	NA	571-506	13	1.5	6.5	0.83
	230/60/3	2	466/387	800/600	600/500	2	336/278	NA	571/506	7/6	1.5	6.5	0.83
RTAC	380/60/3	1	467	600	600	2	203-168	1060-973	345-316	13	1.5	3.5	0.83
185	380/60/3	2	278/231	450/350	350/300	2	203/168	1060/973	345/316	7/6	1.5	3.5	0.83
	460/60/3	1	385	500	450	2	168-139	878-774	285-252	13	1.5	2.8	0.83
	460/60/3	2	230/191	350/300	300/225	2	168/139	878/774	285/252	7/6	1.5	2.8	0.83
	575/60/3	1	308	450	350	2	134-111	705-631	229-205	13	1.5	2.3	0.83
	575/60/3	2	184/153	300/250	225/200	2	134/111	705/631	229/205	7/6	1.5	2.3	0.83
	400/50/3	1	445	600	500	2	198-168	1089-896	354-291	13	0.8	2.8	0.83
	400/50/3	2	267/227	450/350	350/300	2	198/168	1089/896	354/291	7/6	0.8	2.8	0.83
	200/60/3	1	960	1200	1200	2	386-386	NA	701-701	14	1.5	6.5	0.83
	200/60/3	2	528/528	800/800	700/700	2	386/386	NA	701/701	7/7	1.5	6.5	0.83
	230/60/3	1	847	1000	1000	2	336-336	NA	571-571	14	1.5	6.5	0.83
	230/60/3	2	466/466	800/800	600/600	2	336/336	NA	571/571	7/7	1.5	6.5	0.83
RTAC	380/60/3	1	506	700	600	2	203-203	1060-1060	345-345	14	1.5	3.5	0.83
200	380/60/3	2	278/278	450/450	350/350	2	203/203	1060/1060	345/345	7/7	1.5	3.5	0.83
	460/60/3	1	417	500	500	2	168-168	878-878	285-285	14	1.5	2.8	0.83
	460/60/3	2	230/230	350/350	300/300	2	168/168	878/878	285/285	7/7	1.5	2.8	0.83
	575/60/3	1	334	450	400	2	134-134	705-705	229-229	14	1.5	2.3	0.83
	575/60/3	2	184/184	300/300	225/225	2	134/134	705/705	229/229	7/7	1.5	2.3	0.83
	400/50/3	1	485	600	600	2	198-198	1089-1089	354-354	14	0.8	2.8	0.83
	400/50/3	2	267/267	450/450	350/350	2	198/198	1089/1089	354/354	7/7	0.8	2.8	0.83
	200/60/3	1	1051	1200	1200	2	459-358	NA	821-701	14	1.5	6.5	0.83
	200/60/3	2	626/522	1000/800	800/700	2	459/358	NA	821/701	8/6	1.5	6.5	0.83
	230/60/3	1	926	1200	1200	2	399-336	NA	691-571	14	1.5	6.5	0.83
	230/60/3	2	551/459	800/700	700/600	2	399/336	NA	691/571	8/6	1.5	6.5	0.83
RTAC	380/60/3	1	555	700	700	2	242-203	1306-1060	424-345	14	1.5	3.5	0.83
225	380/60/3	2	331/275	500/450	400/350	2	242/203	1306/1060	424/345	8/6	1.5	3.5	0.83
	460/60/3	1	458	600	600	2	200-168	1065-878	346-285	14	1.5	2.8	0.83
	460/60/3	2	273/227	450/350	350/300	2	200/168	1065/878	346/285	8/6	1.5	2.8	0.83
	575/60/3	1	367	500	450	2	160-134	853-705	277-229	14	1.5	2.3	0.83
	575/60/3	2	219/182	350/300	300/225	2	160/134	853/705	277/229	8/6	1.5	2.3	0.83

Electrical Data and Connection

Table E-3 (Continued). Unit electrical data for high efficiency at high ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time			Compressor (Each)		Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
	200/60/3	1	1137	1200	1200	2	459-459	NA	821-821	16	1.5	6.5	0.83
	200/60/3	2	626/626	1000/1000	800/800	2	459/459	NA	821/821	8/8	1.5	6.5	0.83
	230/60/3	1	1002	1200	1200	2	399-399	NA	691-691	16	1.5	6.5	0.83
	230/60/3	2	551/551	800/800	700/700	2	399/399	NA	691/691	8/8	1.5	6.5	0.83
RTAC	380/60/3	1	601	800	700	2	242-242	1306-1306	424-424	16	1.5	3.5	0.83
250	380/60/3	2	331/331	500/500	400/400	2	242/242	1306/1306	424/424	8/8	1.5	3.5	0.83
	460/60/3	1	495	600	600	2	200-200	1065-1065	346-346	16	1.5	2.8	0.83
	460/60/3	2	273/273	450/450	350/350	2	200/200	1065/1065	346/346	8/8	1.5	2.8	0.83
	575/60/3	1	397	500	450	2	160-160	853-853	277-277	16	1.5	2.3	0.83
	575/60/3	2	219/219	350/350	300/300	2	160/160	853/853	277/277	8/8	1.5	2.3	0.83
	400/50/3	1	569	700	700	3	138-138-198	796-796-1089	259-259-354	16	0.8	2.8	1.2
	400/50/3	2	339/265	450/450	400/350	3	138/138/198	796/796/1089	259/259/354	10/6	0.8	2.8	1.2
	200/60/3	1	NA										
	200/60/3	2	798/522	1000/800	1000/700	3	320/320/386	NA	600/600/701	12/6	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	704/459	800/700	800/600	3	278/278/336	NA	506/506/571	12/6	1.5	6.5	1.2
RTAC	380/60/3	1	NA										
275	380/60/3	2	420/275	500/450	500/350	3	168/168/203	973/973/1060	316/316/345	12/6	1.5	3.5	1.2
	460/60/3	1	539	700	600	3	139-139-168	774-774-878	252-252-285	18	1.5	2.8	1.2
	460/60/3	2	347/227	450/350	400/300	3	139/139/168	774/774/878	252/252/285	12/6	1.5	2.8	1.2
	575/60/3	1	431	500	500	3	111-111-134	631-631-705	205-205-229	18	1.5	2.3	1.2
	575/60/3	2	278/182	350/300	350/225	3	111/111/134	631/631/705	205/205/229	12/6	1.5	2.3	1.2
	400/50/3	1	634	800	700	3	168-168-168	896-896-1089	291-291-354	18	0.8	2.8	1.2
	400/50/3	2	412/265	500/450	500/350	3	168/168/168	896/896/1089	291/291/254	12/6	0.8	2.8	1.2
	200/60/3	1	NA										
	200/60/3	2	960522	1200/800	1200/700	3	386/386/386	NA	701/701/701	14/6	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	847/459	1000/700	1000/600	3	336/336/336	NA	571/571/571	14/6	1.5	6.5	1.2
RTAC	380/60/3	1	NA										
300	380/60/3	2	506/275	700/450	600/350	3	203/203/203	1060/1060/1060	345/345/345	14/6	1.5	3.5	1.2
	460/60/3	1	602	700	700	3	168-168-168	878-878-878	285-285-285	20	1.5	2.8	1.2
	460/60/3	2	418/227	500/350	500/300	3	168/168/168	878/878/87/	285/285/285	14/6	1.5	2.8	1.2
	575/60/3	1	484	600	600	3	134-134-134	705-705-705	229-229-229	20	1.5	2.3	1.2
	575/60/3	2	334/182	450/300	400/225	3	134/134/134	705/705/705	229/229/229	14/6	1.5	2.3	1.2
	400/50/3	1	700	800	800	3	198-198-198	1089-1089-1089	354-354-354	20	0.8	2.8	1.2
	400/50/3	2	485/265	600/450	600/350	3	198/198/198	1089/1089/1089	354/354/354	14/6	0.8	2.8	1.2
	200/60/3	1	NA										
	200/60/3	2	798/798	1000/1000	1000/1000	4	320/320/320/320	NA	600/600/600/600	12/12	1.5	6.5	1.2
	230/60/3	1	NA										
	230/60/3	2	704/704	800/800	800/800	4	278/278/278/278	NA	506/506/506/506	12/12	1.5	6.5	1.2
RTAC	380/60/3	1	NA										
350	380/60/3	2	420/420	500/500	500/500	4	168/168/168/168	973/973/973/973	316/316/316/316	12/12	1.5	3.5	1.2
	460/60/3	1	658	700	700	4	139-139-139-139	774-774-774-774	252-252-252-252	24	1.5	2.8	1.2
	460/60/3	2	347/347	450/450	400/400	4	139/139/139/139	774/774/774/774	252/252/252/252	12/12	1.5	2.8	1.2
	575/60/3	1	527	600	600	4	111-111-111-111	631-631-631-631	205-205-205-205	24	1.5	2.3	1.2
	575/60/3	2	278/278	350/350	350/350	4	111/111/111/111	631/631/631/631	205/205/205/205	12/12	1.5	2.3	1.2
	400/50/3	1	782	800	800	4	168-168-168-168	896-896-896-896	291-291-291-291	24	0.8	2.8	1.59
	400/50/3	2	412/412	500/500	500/500	4	168/168/168/168	896/896/896/896	291/291/291/291	12/12	0.8	2.8	1.59

Electrical Data and Connection

Table E-3 (Continued). Unit electrical data for high efficiency at high ambient operation

			Unit Wiring				Motor Data						
		# of		Max. Fuse, HACR	Rec. Time			Compressor (Each)		Fans (Each)			
Unit	Rated	Power	MCA (3)	Breaker or MOP (11)	Delay or RDE (4)		RLA (5)	XLRA (8)	YLRA (8)	Qty.			Control
Size	Voltage	Conns (1)	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Qty	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	Ckt 1/Ckt 2	kW	FLA	kW (7)
RTAC	400/50/3	1	855	1000	1000	4	198-198-168-168	1089-1089-896-896	354-354-291-291	26	0.8	2.8	1.59
375	400/50/3	2	485/412	600/500	600/500	4	198/198/168/168	1089/1089/896/896	254/254/291/291	14/12	0.8	2.8	1.59
	200/60/3	1	NA										
	200/60/3	2	960/960	1200/1200	1200/1200	4	386/386/386/386	NA	701/701/701/701	14/14	1.5	6.5	1.59
	230/60/3	1	NA										
	230/60/3	2	847/847	1000/1000	1000/1000	4	336/336/336/336	NA	571/571/571/571	14/14	1.5	6.5	1.59
RTAC	380/60/3	1	NA										
400	380/60/3	2	505/506	700/700	600/600	4	203/203/203/203	1060/1060/1060/1060	345/345/345/345	14/14	1.5	3.5	1.59
	460/60/3	1	793	800	800	4	168-168-168-168	878-878-878-878	285-285-285-285	28	1.5	2.8	1.59
	460/60/3	2	418/418	500/500	500/500	4	168/168/168/16/	878/878/878/878	285/285/285/285	14/14	1.5	2.8	1.59
	575/60/3	1	634	700	700	4	134-134-134-134	705-705-705-705	229-229-229-229	28	1.5	2.3	1.59
	575/60/3	2	334/334	450/450	400/400	4	134/134/134/134/	705/705/705/705	229/229/229/229	14/14	1.5	2.3	1.59
	400/50/3	1	920	1000	1000	4	198-198-198-198	1089-1089-1089-1089	354-354-354-354	28	0.8	2.8	1.59
	400/50/3	2	485/485	600/600	600/600	4	198/198/198/198	1089/1089/1089	354/354/354/354	14/14	0.8	2.8	1.59

Notes:

1. As standard, all units have single point power connection. Optional dual point power connections are available.
2. Max Fuse or HACR type breaker = 225 percent of the largest compressor RLA plus 100 percent of the second compressor RLA, plus the sum of the condenser fan FLA per NEC 440-22. Use FLA per circuit, NOT FLA for the entire unit).
3. MCA - Minimum Circuit Ampacity - 125 percent of largest compressor RLA plus 100 percent of the second compressor RLA plus the sum of the condenser fans FLAs per NEC 440-33.
4. RECOMMENDED TIME DELAY OR DUAL ELEMENT (RDE) FUSE SIZE: 150 percent of the largest compressor RLA plus 100 percent of the second compressor RLA and the sum of the condenser fan FLAs.
5. RLA - Rated Load Amps - rated in accordance with UL Standard 1995.
6. Local codes may take precedence.
7. Control kW includes operational controls only. Does not include evaporator heaters.
8. XLRA - Locked Rotor Amps - based on full winding (x-line) start units. YLRA for wye-delta starters is ~1/3 of LRA of x-line units.
9. VOLTAGE UTILIZATION RANGE:

Rated Voltage	Utilization Range
200/60/3	180-220
230/60/3	208-254
380/60/3	342-418
460/60/3	414-506
575/60/3	516-633
400/50/3	360-440

10. A separate 115/60/1, 20 amp or 220/50/1, 15 amp customer provided power connection is needed to power the evaporator heaters (1640 watts).
11. If factory circuit breakers are supplied with the chiller, then these values represent Maximum Overcurrent Protection (MOP).
12. When the circuit breaker option is ordered, two circuit breakers will be provided (one per circuit) for both single and dual point power.
13. Motor kW is for standard fans. Low noise fans at 50 Hz are rated at 1.1 kW/fan.

Electrical Data and Connection

Wire Size

Table E-4. Customer wire selection for single point units

Unit Size	Rated Voltage	Wire Selection Size to Main Terminal Block XL Starter Connector Wire Range	Wire Selection Size to Main Terminal Block YD Starter Connector Wire Range	Wire Selection Size to Disconnect (2) Connector Wire Range	Wire Selection Size to Circuit Breaker (2) Connector Wire Range
	200V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size F	Lug Size F	Lug Size A	Lug Size A
140	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
STD	575V-60Hz	Lug Size F	Lug Size F	Lug Size C	Lug Size C
	400V-50Hz	Lug Size F	Lug Size F	Lug Size A	Lug Size A
	200V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size F	Lug Size F	Lug Size A	Lug Size A
140	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
HIGH	575V-60Hz	Lug Size F	Lug Size F	Lug Size C	Lug Size C
	400V-50Hz	Lug Size F	Lug Size F	Lug Size A	Lug Size A
	200V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
155	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
STD	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size C	Lug Size C
	400V-50Hz	Lug Size E or I	Lug Size E or I	Lug Size A	Lug Size A
	200V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
155	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
HIGH	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size C	Lug Size C
	400V-50Hz	Lug Size E or I	Lug Size E or I	Lug Size A	Lug Size A
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
170	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
STD	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	400V-50Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size G	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
170	460V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
HIGH	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	400V-50Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
185	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
STD	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	400V-50Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
185	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
HIGH	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	400V-50Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size G	Lug Size G	Lug Size H	Lug Size H
200	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
STD	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	400V-50Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size G	Lug Size G	Lug Size H	Lug Size H
200	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
HIGH	575V-60Hz	Lug Size E or I	Lug Size F	Lug Size A	Lug Size A
	400V-50Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B

Electrical Data and Connection Wire Size

Table E-4 (Continued). Customer wire selection for single point units

Unit Size	Rated Voltage	Wire Selection Size to Main Terminal Block XL Starter Connector Wire Range	Wire Selection Size to Main Terminal Block YD Starter Connector Wire Range	Wire Selection Size to Disconnect (2) Connector Wire Range	Wire Selection Size to Circuit Breaker (2) Connector Wire Range
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
225	380V-60Hz	Lug Size G	Lug Size G	Lug Size H	Lug Size H
STD	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size E or I	Lug Size E or I	Lug Size A	Lug Size A
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
225	380V-60Hz	Lug Size G	Lug Size G	Lug Size H	Lug Size H
HIGH	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
	575V-60Hz	Lug Size E or I	Lug Size E or I	Lug Size A	Lug Size A
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
250	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
STD	575V-60Hz	Lug Size G	Lug Size N	Lug Size A	Lug Size A
	400V-50Hz	NA	NA	NA	NA
	200V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
	230V-60Hz	NA	Lug Size L	Lug Size B	Lug Size B
RTAC	380V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
250	460V-60Hz	Lug Size G	Lug Size G	Lug Size B	Lug Size B
HIGH	575V-60Hz	Lug Size G	Lug Size N	Lug Size B	Lug Size B
	400V-50Hz	NA	NA	NA	NA
RTAC	460V-60Hz	NA	NA	NA	Lug Size L
275	575V-60Hz	NA	NA	NA	Lug Size L
STD	400V-50Hz	NA	NA	NA	Lug Size L
RTAC	460V-60Hz	NA	NA	NA	Lug Size L
275	575V-60Hz	NA	NA	NA	Lug Size L
HIGH	400V-50Hz	NA	NA	NA	Lug Size L
RTAC	460V-60Hz	NA	NA	NA	Lug Size L
300	575V-60Hz	NA	NA	NA	Lug Size L
STD	400V-50Hz	NA	NA	NA	Lug Size L
RTAC	460V-60Hz	NA	NA	NA	Lug Size L
300	575V-60Hz	NA	NA	NA	Lug Size L
HIGH	400V-50Hz	NA	NA	NA	Lug Size L
RTAC	460V-60Hz	NA	NA	NA	Lug Size L
350	575V-60Hz	NA	NA	NA	Lug Size L
STD	400V-50Hz	NA	NA	NA	Lug Size L
RTAC	460V-60Hz	NA	NA	NA	Lug Size L
350	575V-60Hz	NA	NA	NA	Lug Size L
HIGH	400V-50Hz	NA	NA	NA	Lug Size L
RTAC 375 STD	400V-50Hz	NA	NA	NA	Lug Size L
RTAC 375 HIGH	400V-50Hz	NA	NA	NA	Lug Size L
RTAC	460V-60Hz	NA	NA	NA	Lug Size L
400	575V-60Hz	NA	NA	NA	Lug Size L
STD	400V-50Hz	NA	NA	NA	Lug Size L
RTAC	460V-60Hz	NA	NA	NA	Lug Size L
400	575V-60Hz	NA	NA	NA	Lug Size L
HIGH	400V-50Hz	NA	NA	NA	Lug Size L
RTAC	460V-60Hz	NA	NA	NA	Lug Size L
450 STD	575V-60Hz	NA	NA	NA	Lug Size L
RTAC	460V-60Hz	NA	NA	NA	Lug Size L
500 STD	575V-60Hz	NA	NA	NA	Lug Size L

Lug Size A = (1) 4/0 to 600 MCM per phase
Lug Size B = (4) 4/0 to 500 MCM per phase
Lug Size C = (1) #3 to 350 MCM per phase
Lug Size D = (1) #2 to 500 MCM per phase
Lug Size E (5) = (2) 1/0 to 250 MCM per phase
Lug Size F = (2) #4 to 500 MCM per phase
Lug Size G = (2) #1 to 500 MCM per phase
Lug Size H = (2) 400 to 500 MCM per phase
Lug Size I (5) = (1) #2 to 750 MCM per phase

Lug Size J = (1) 250 to 500 MCM per phase
Lug Size K = (2) 3/0 to 350 MCM per phase
Lug Size L = (4) #2 to 600 MCM per phase
Lug Size M = (2) #4 to 600 MCM per phase
Lug Size N = (2) #2 to 600 MCM per phase
Lug Size O = (1) #2 to 250 MCM per phase

1. As standard, 140-250 ton (60 Hz) units and 140-200 ton (50 Hz) units have single point power connections. Optional dual point power connections are available. As standard, 275-500 ton (60 Hz) units and 250-400 ton (50 Hz) units have dual point power connections. Optional single point power connections are available on 380V, 460V, 575 V/60 Hz and 400V/50 Hz units.
2. Non-fused unit disconnect and circuit breaker are optional.
3. Copper wire only, sized per N.E.C., based on nameplate minimum circuit ampacity (MCA).
4. Circuit Breaker sizes are for factory mounted only. Field installed circuit breakers need to be sized using HACR breaker recommendations from Table E-1.
5. A single, dual-rated lug is associated with the "Lug Size E or I" designation. Each phase of the lug has a single, oval-shaped hole, into which a single #2 to 750 MCM wire OR two 1/0 to 250 MCM wires can be inserted.

Electrical Data and Connection

Wire Size

Table E-5. Customer wire selection for dual point units

Unit Size	Rated Voltage	Wire Selection Size to Main Terminal Block XL Starter Connector Wire Range Ckt 1 / Ckt 2	Wire Selection Size to Main Terminal Block YD Starter Connector Wire Range Ckt 1 / Ckt 2	Wire Selection Size to Disconnect (2) Connector Wire Range Ckt 1 / Ckt 2	Wire Selection Size to Circuit Breaker (2) Connector Wire Range Ckt 1 / Ckt 2
	200V-60Hz	NA	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
	230V-60Hz	NA	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
140	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
STD	575V-60Hz	Lug Size F/Lug Size F	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
	230V-60Hz	NA	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
140	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
HIGH	575V-60Hz	Lug Size F/Lug Size F	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size K/Lug Size K	Lug Size K/Lug Size K
	230V-60Hz	NA	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
155	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
STD	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size K/Lug Size K	Lug Size K/Lug Size K
	230V-60Hz	NA	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
155	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
HIGH	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size K/Lug Size K	Lug Size K/Lug Size K
	230V-60Hz	NA	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
170	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
STD	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Szie C/Lug Size C	Lug Szie C/Lug Size C
	400V-50Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size K/Lug Size K	Lug Size K/Lug Size K
	230V-60Hz	NA	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
170	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
HIGH	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size K/Lug Size K	Lug Size K/Lug Size K
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
185	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
STD	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size K/Lug Size K	Lug Size K/Lug Size K
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
185	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
HIGH	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size K/Lug Size K	Lug Size K/Lug Size K
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
200	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
STD	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size K/Lug Size K	Lug Size K/Lug Size K
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
200	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
HIGH	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C

Electrical Data and Connection Wire Size

Table E-5 (Continued). Customer wire selection for dual point units

Unit Size	Rated Voltage	Wire Selection Size to Main Terminal Block XL Starter Connector Wire Range Ckt 1 / Ckt 2	Wire Selection Size to Main Terminal Block YD Starter Connector Wire Range Ckt 1 / Ckt 2	Wire Selection Size to Disconnect (2) Connector Wire Range Ckt 1 / Ckt 2	Wire Selection Size to Circuit Breaker (2) Connector Wire Range Ckt 1 / Ckt 2
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
225	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
STD	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size A/Lug Size A	Lug Size A/Lug Size A
	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
225	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
HIGH	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size A/Lug Size A	Lug Size A/Lug Size A
	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
250	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size A/Lug Size A	Lug Size A/Lug Size A
STD	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size G/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
RTAC	380V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size J/Lug Size J	Lug Size J/Lug Size J
250	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size A/Lug Size A	Lug Size A/Lug Size A
HIGH	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	400V-50Hz	Lug Size G/Lug Size I or E	Lug Size I or E/Lug Size I or E	Lug Size C/Lug Size C	Lug Size C/Lug Size C
	200V-60Hz	NA	Lug Size L/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	380V-60Hz	Lug Size G/Lug Size I or E	Lug Size G/Lug Size I or E	Lug Size B/Lug Size A	Lug Size B/Lug Size A
275	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size I or E	Lug Size A/Lug Size C	Lug Size A/Lug Size C
STD	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size C	Lug Size A/Lug Size C
	400V-50Hz	Lug Size G/Lug Size I or E	Lug Size N/Lug Size I or E	Lug Size B/Lug Size C	Lug Size B/Lug Size C
	200V-60Hz	NA	Lug Size L/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	380V-60Hz	Lug Size G/Lug Size I or E	Lug Size G/Lug Size I or E	Lug Size B/Lug Size A	Lug Size B/Lug Size A
275	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size I or E	Lug Size A/Lug Size C	Lug Size A/Lug Size C
HIGH	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size C	Lug Size A/Lug Size C
	400V-50Hz	Lug Size G/Lug Size I or E	Lug Size N/Lug Size I or E	Lug Size B/Lug Size C	Lug Size B/Lug Size C
	200V-60Hz	NA	Lug Size L/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	380V-60Hz	Lug Size G/Lug Size I or E	Lug Size G/Lug Size I or E	Lug Size H/Lug Size A	Lug Size H/Lug Size A
300	460V-60Hz	Lug Size L/Lug Size L	Lug Size M/Lug Size I or E	Lug Size B/Lug Size C	Lug Size B/Lug Size C
STD	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size C	Lug Size A/Lug Size C
	400V-50Hz	Lug Size G/Lug Size I or E	Lug Size N/Lug Size I or E	Lug Size B/Lug Size C	Lug Size B/Lug Size C
	200V-60Hz	NA	Lug Size L/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	380V-60Hz	Lug Size G/Lug Size I or E	Lug Size G/Lug Size I or E	Lug Size H/Lug Size A	Lug Size H/Lug Size A
300	460V-60Hz	Lug Size L/Lug Size L	Lug Size M/Lug Size I or E	Lug Size B/Lug Size C	Lug Size B/Lug Size C
HIGH	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size C	Lug Size A/Lug Size C
	400V-50Hz	Lug Size G/Lug Size I or E	Lug Size N/Lug Size I or E	Lug Size B/Lug Size C	Lug Size B/Lug Size C
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	380V-60Hz	Lug Size G/Lug Size G	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
350	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size A	Lug Size A/Lug Size A
STD	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size A	Lug Size A/Lug Size A
	400V-50Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	380V-60Hz	Lug Size G/Lug Size G	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
350	460V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size A	Lug Size A/Lug Size A
HIGH	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size A	Lug Size A/Lug Size A
	400V-50Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B

Table E-5 (Continued). Customer wire selection for dual point units

Unit Size	Rated Voltage	Wire Selection Size to Main Terminal Block XL Starter Connector Wire Range Ckt 1 / Ckt 2	Wire Selection Size to Main Terminal Block YD Starter Connector Wire Range Ckt 1 / Ckt 2	Wire Selection Size to Disconnect (2) Connector Wire Range Ckt 1 / Ckt 2	Wire Selection Size to Circuit Breaker (2) Connector Wire Range Ckt 1 / Ckt 2
RTAC 375 STD	400V-50Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC 375 HIGH	400V-50Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	380V-60Hz	Lug Size G/Lug Size G	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
400	460V-60Hz	Lug Size L/Lug Size L	Lug Size M/Lug Size M	Lug Size B/Lug Size B	Lug Size B/Lug Size B
STD	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size A	Lug Size A/Lug Size A
	400V-50Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	230V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	380V-60Hz	Lug Size G/Lug Size G	Lug Size G/Lug Size G	Lug Size H/Lug Size H	Lug Size H/Lug Size H
400	460V-60Hz	Lug Size L/Lug Size L	Lug Size M/Lug Size M	Lug Size B/Lug Size B	Lug Size B/Lug Size B
HIGH	575V-60Hz	Lug Size I or E/Lug Size I or E	Lug Size F/Lug Size F	Lug Size A/Lug Size A	Lug Size A/Lug Size A
	400V-50Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	230V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
450	380V-60Hz	Lug Size G/Lug Size G	Lug Size G/Lug Size G	Lug Size B/Lug Size H	Lug Size B/Lug Size H
STD	460V-60Hz	Lug Size L/Lug Size L	Lug Size N/Lug Size M	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	575V-60Hz	Lug Size G/Lug Size G	Lug Size N/Lug Size F	Lug Size B/Lug Size A	Lug Size B/Lug Size A
	200V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
RTAC	230V-60Hz	NA	Lug Size L/Lug Size L	Lug Size B/Lug Size B	Lug Size B/Lug Size B
500	380V-60Hz	Lug Size G/Lug Size G	Lug Size G/Lug Size G	Lug Size B/Lug Size B	Lug Size B/Lug Size B
STD	460V-60Hz	Lug Size L/Lug Size L	Lug Size N/Lug Size N	Lug Size B/Lug Size B	Lug Size B/Lug Size B
	575V-60Hz	Lug Size G/Lug Size G	Lug Size F/Lug Size L	Lug Size B/Lug Size A	Lug Size B/Lug Size A

Lug Size A = (1) 4/0 to 600 MCM per phase
Lug Size B = (4) 4/0 to 500 MCM per phase
Lug Size C = (1) #3 to 350 MCM per phase
Lug Size D = (1) #2 to 500 MCM per phase
Lug Size E (5) = (2) 1/0 to 250 MCM per phase
Lug Size F = (2) #4 to 500 MCM per phase
Lug Size G = (2) #1 to 500 MCM per phase
Lug Size H = (2) 400 to 500 MCM per phase
Lug Size I (5) = (1) #2 to 750 MCM per phase
Lug Size J = (1) 250 to 500 MCM per phase
Lug Size K = (2) 3/0 to 350 MCM per phase
Lug Size L = (4) #2 to 600 MCM per phase
Lug Size M = (2) #4 to 600 MCM per phase
Lug Size N = (2) #2 to 600 MCM per phase
Lug Size O = (1) #2 to 250 MCM per phase

1. As standard, 140-250 ton (60 Hz) units and 140-200 ton (50 Hz) units have single point power connections. Optional dual point power connections are available. As standard, 275-500 ton (60 Hz) units and 250-400 ton (50 Hz) units have dual point power connections. Optional single point power connections are available on 380V, 460V, 575 V/60 Hz and 400V/50 Hz units.
2. Non-fused unit disconnect and circuit breaker are optional.
3. Copper wire only, sized per N.E.C., based on nameplate minimum circuit ampacity (MCA).
4. Circuit Breaker sizes are for factory mounted only. Field installed circuit breakers need to be sized using HACR breaker recommendations from Table E-1.
5. A single, dual-rated lug is associated with the "Lug Size E or I" designation. Each phase of the lug has a single, oval-shaped hole, into which a single #2 to 750 MCM wire OR two 1/0 to 250 MCM wires can be inserted.

Electrical Data and Connection

Typical Wiring Diagram

Field Wiring, 2-Compressor Units